Community Experience Distilled

Using CiviCRM

Develop and implement a fully-functional, systematic CRM plan for your organization using CiviCRM

Foreword by David Greenberg, CiviCRM Project Lead

Joseph Murray

Brian P. Shaughnessy

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Joseph Murray, PhD

Brian P. Shaughnessy

BIRMINGHAM - MUMBAI

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First published: February 2011

Production Reference: 2170211

Published by Packt Publishing Ltd.
32 Lincoln Road
Olton
Birmingham, B27 6PA, UK.

ISBN 978-1-849512-26-8

www.packtpub.com

Cover Image by John M. Quick (john.m.quick@gmail.com)

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Foreword

Donald Lobo, Michal Mach, and I started CiviCRM almost six years ago. Back then, open source software had gained traction in the operating system arena, but the idea of an open source application designed from the ground up to meet the needs of non-profits and other civic sector organizations was pretty radical. We were convinced that there was a natural affinity between the principals of open source development, namely peer production, collaboration, and transparency, and the goals and culture of many civic sector organizations.

As I see it, the chief benefit of open source software is that the capabilities of the software grow and expand to meet the needs of the organizations that are sponsoring and using it. This has been called "fitness for purpose", and differentiates CiviCRM from other CRM software, which often is more like an ill-fitting "hand-me-down" from the enterprise sector.

CiviCRM has grown to become the CRM software of choice for thousands of organizations around the globe. We've built a talented and dedicated team of developers, and met the challenges of building software which addresses the diverse needs of organizations ranging from community arts groups to national membership associations, grassroots organizations, political campaigns, religious organizations, foundations, and government agencies.

Along the way, we've struggled with finding the right processes and tools for nurturing a supportive and welcoming community, improving the quality and usability of the software while responding to the never-ending stream of requests for more (and more complex) functionality, and developing a revenue stream to sustain the project. This is an ongoing journey, and the advent of the first commercially published guide to CiviCRM is another milestone.

This book is a power tool of sorts. As a "manual of possibility", it will ignite new thinking as to how you can maximize returns to your organization that have not been possible before based on prior technologies you may have used (or lacked). If you're a current CiviCRM user, you will find ways to streamline workflows and leverage the data you have more effectively. Regardless of your situation, this book has been designed with YOU in mind.

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The authors, Brian Shaughnessy and Joseph Murray, have been active in the CiviCRM community for several years, and have implemented CiviCRM-based solutions for a wide variety of organizations. This has given them insight into what CiviCRM is all about, and how it can be used for optimal return.

When I see new and creative CiviCRM-based campaigns come across my Twitter feed, new local Civi meet-ups announced, or patches submitted by a newly up-to-speed developer, or watch a non-profit staff person's eyes light up when they see the power of having all their constituent information in one centralized place, I feel confident in the future of CiviCRM.

Ultimately, that strength of any open source project is the strength of the community behind it. I urge all of you who use CiviCRM to participate actively in the community. Sponsor new features and improvements, submit patches, share case studies, and help others who are getting started! You can do it all at `http://civicrm.org/`.

David Greenberg

Co-Founder of CiviCRM

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About the Authors

Joseph Murray, **PhD**, is the owner and principal of JMA Consulting, specialists in e-Advocacy, e-Consultation, and Citizen Engagement for progressive organizations. He has extensive experience on non-profit boards, at senior levels of government, and running electoral, referendum, and advocacy campaigns. JMA Consulting has provided CRM systems to hundreds of political campaigns tracking interactions with tens of millions of voters, as well as providing Drupal and CiviCRM strategy, implementation, development and training services to numerous non-profit and advocacy groups.

Joe has served on the CiviCRM Community Advisory Group, and is a Director of the Toronto Drupal Users Group.

I'd like to thank my life partner, Lisa Austin, for her patience, love, and support; and our sons, Calum and Rafe, for the wrestling matches and tickle fights. Thanks also to my clients, for their CRM challenges, patronage, and thoughtful and passionate efforts to make the world a better place , to Dave, Lobo, Kurund, and the rest of the core team for their leadership, vision, and hard work; to Brian for shouldering so much work in this wonderful collaboration; and to Steven Wilding and rest of Packt crew for their support and assistance in making this book a reality. Finally, I'd like to thank all the CiviCRM community developers, wiki authors, forum posters, and users around the world - you're the inspiration for this book and the people who really make our open source project prosper.

JPM

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Brian P. Shaughnessy is the owner and principal of Lighthouse Consulting & Design, a web development firm specializing in Joomla! and CiviCRM implementations. Brian previously worked with an association management company for over 10 years, providing services to not-for-profit professional, trade, and charitable organizations. After starting his own business, he channeled that experience into effective implementations of CiviCRM for not-for-profits. He has worked with organizations around the world, helping to achieve greater efficiencies and expand functionality through CiviCRM.

Brian has served on the CiviCRM Community Advisory Group and helped author the first edition of *Understanding CiviCRM* (later renamed *CiviCRM: A Comprehensive Guide*). He has worked with the core development team to provide end-user training and maintains a strong working relationship with the project leaders. Brian has also been active in the Joomla! project, serving on the Google Summer of Code program as a Joomla! mentor. He has provided professional Joomla! training through `http://technicallead.com/`.

I'd like to thank my family for their support while writing this book, and to Joe for helping spearhead the project and partnering as my co-author. I'd also like to give particular thanks to the core development team and CiviCRM community for helping make a terrific piece of software. Lobo, Dave, Kurund, and the developers spread around the world—thanks for bringing the power of an open source CRM to the not-for-profit community.

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About the Reviewers

Alan Dixon has been helping non-profits with their contact databases since 1989. He works as an independent website developer, is based in Toronto, Canada, and has been building websites with CiviCRM since 2006. He maintains the site `http://community.civicrm.ca`.

David Geilhufe, born and raised in Silicon Valley, focuses on the intersection of technology and social change. He has founded non-profits and for-profits, built the operations of corporate citizenship organizations and private foundations, developed venture-funded enterprise software systems, brought together open source communities, and mentored at-risk youth into high-tech employment. He's always looking to create and execute a big idea that will do a little good for the world.

David currently runs `http://netsuite.org/`, NetSuite's corporate citizenship program focused on delivering an ultra-low-cost back office solution to charities and social enterprises worldwide.

Mohamed M. Hagag is a Unix/Linux system engineer with free open source software passion. He likes research and development on FOSS, and is working independently and with teams on FOSS R&D since 2004. His current and past employers are small and medium-scale companies working in the IT market in general with some level of UNIX/Linux specialization. Though he hasn't officially worked on any book, he has worked on translating some technical books to Arabic language.

I want to first thank God for everything good in my life, and then thank my parents, sisters and my wife for making my life that nice, so that I can move ahead.

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Rico Landman is a web developer from Zwolle, the Netherlands. After working for several companies as a web developer, he started his own company Futurix. He mainly works with PHP and is a devoted open source partisan, excelling in the use of Magento, Drupal, vTiger, and so on.

In the last few years he has tended to seek cooperation with other open-source-oriented companies. Most of his projects reside under Simourix (co-owner) or Trinfinity, an international network of specialists working in the high-end Internet industry.

Dedicated to Marja, Carmen, and Ralph, and also to my business partners Marcello and Hans.

Eileen McNaughton lives in Wellington, New Zealand where she divides her time between CiviCRM consulting, accounts for the family automotive business, two pre-school super-heroes, and the occasional bit of sleep. She first became involved in CiviCRM while setting up online class registrations for Wellington Circus Trust (for which she is a Trustee) and has been involved in a number of CiviCRM and Drupal implementations for Fuzion since then. She has contributed numerous patches to the Core codebase including payment processors, a custom search, and enhancements to invoices. She has also been working on integration with Xero accounts package and a CiviCRM extension to the popular Drupal Migrate module.

She is a regular voice on the forums and CiviCRM blog, and is driving the Make-it-Happen initiative. She serves on the CiviCRM API and CiviAccounts team, appointments to which are an honor on some days, and bring the word "sucker" to mind on others. Eileen was part of the team that wrote the original CiviCRM Floss manual in the book sprint.

I would like to thank Donald Lobo and the rest of the CiviCRM core team for making such a great CRM available to the world and for the huge effort they put into helping people use it.

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Preface

CiviCRM is a web-based, open source Constituent Relationship Management (CRM) system, designed specifically to meet the needs of advocacy, non-profit, and non-governmental organizations. Elected officials, professional/trade associations, political campaigns and parties, government agencies, and other similar organizations are among its growing number of enthusiastic users. This book shows you how to harness CiviCRM's impressive array of possibilities as you develop and execute performance-critical CRM strategies.

Throughout this book, we will review the structure and main functionality of CiviCRM as we guide you in developing and successfully implementing a CRM strategy for your organization using detailed explanations and practical examples.

In addition, we will discuss organizational processes/workflows that are impacted by CiviCRM, providing guidance as you review and analyze your internal operations with regard to the CRM implementation. We will present best practices of constituent relationship management and provide guidance on how to effectively implement them with CiviCRM. The benefits of using CiviCRM will be felt across your organization, helping to better achieve your mission.

Using CiviCRM, your organization will interact with constituents more effectively and handle staffing changes more smoothly by tracking contacts and interactions with them in a unified system shared across the organization. Organization leadership will use data gathered from constituents to analyze and inform their decision making process.

If your organization raises funds through donations, contributions, event fees, and membership, you'll be able to raise more money and reduce costs by identifying qualified prospects for targeted fundraising initiatives. We will demonstrate how to attract new prospects and convert them to donors using online, direct mail, telemarketing, and direct contact channels using CiviCRM. You will learn why and how to set up and grow your monthly donor program, as well as improve the frequency, average donation amounts, and retention rates of your donor base.

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With CiviCRM, you'll be able to reduce the burden on administrative resources by providing online payments and self-service options for event registrations and membership renewals. You can increase the likelihood of your existing constituents becoming more involved with your organization, ensuring more of your members show up to volunteer, identifying potential leaders, and stewarding their volunteer activities.

Finally, you will be making relevant information easily available that quantifies what a great job you've been doing, including the number of hours that volunteers gave to your organization last year, the number of cases managed, membership retention rates, event participation statistics, or the number of new viral signups from your latest urgent action e-mail.

This easy-to-understand book will guide you through building a well-formulated and a well-executed CRM system that meets your organization's needs perfectly.

What this book covers

Chapter 1, *Achieving Your Mission with CiviCRM* helps you understand the goal, purpose, and function of a CRM, looking beyond the technology to the underlying objectives and benefits of a unified approach to contact and communication management. In this chapter, you learn how CiviCRM can be used to effectively and efficiently meet these objectives.

Chapter 2, *Planning Your CRM Implementation* shows you how to review critical steps and considerations as you plan your CRM implementation, including project management methods, building the project team, and setting realistic yet effective goals.

Chapter 3, *Installation, Configuration, and Maintenance* shows you how to systematically and comprehensively review the installation and initial configuration process for CiviCRM, while learning about core concepts and how they will affect the way you track and manage information. In this chapter, you will also establish a path for ongoing maintenance and updates.

Chapter 4, *CiviCRM Basics: Moving through the System and Working with Contacts* shows you how to see your data through the lens of the contact record and learn how to create, edit, and work with the contact and its related records, including relationships, activities, notes, tags, and groups. Begin using the various search tools to find and work with multiple contacts through bulk actions.

Chapter 5, *Collecting, Organizing, and Importing Data* shows you how to create custom data fields for different purposes and organize them along with core information fields into profiles for data entry, searching, and listing. Walk through the data import process, from pre-process data scrubbing and structural clean-up to import options and field mapping.

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Chapter 6, *Communicating Better* takes your message to the masses through effective communication. It helps you understand how CiviCRM tools can be harnessed through an integrated approach to send, track, and measure the effectiveness of your printed, spoken, and digital communications.

Chapter 7, *Fundraising: Money for Your Mission* teaches you how to develop a fundraising plan and how to configure the tools to promote and track your efforts. In this chapter, you will also work with contributions through the contact record and other management tools.

Chapter 8, *Growing Your Membership and Interacting with Members* shows you how to configure the system for your membership needs and understand the core concepts of member tracking in CiviCRM. You can use online forms to solicit new members and encourage renewals, and track, search, and report on member activity.

Chapter 9, *Managing Events* shows you how to step through the event creation wizard, understanding the various options for handling registrations, waitlists, and approval-based workflows. Promote your event through event information and registration pages, and RSS/iCal/HTML lists. Track registrations as they come in and work with the participant details through the contact record, attendance lists, and reports.

Chapter 10, *Interacting with Constituents: Managing Cases* makes you understand the purpose and key concepts of case management while reviewing possible uses that could be of value to your organization. You also configure a case type with custom activities and a timeline workflow, and review the management and tracking tools available as you seek case resolution.

Chapter 11, *Providing Support: Grant Management* shows you how you can improve the ways you support constituents through grant dissemination using CiviCRM's grant tracking tools. It also shows how you can manage the application and approval process and later track monetary disbursements and reporting requirements.

Chapter 12, *Telling Your Story: Building Reports* helps you tell the story of your organization through reports, having now covered the full set of features and functionality provided by CiviCRM.

Chapter 13, Customization, Community, and Cooperation makes you look ahead to future versions of CiviCRM, understand the essential best practices for customizing your installation, and learn how your involvement in the CiviCRM community can help support your organization while advancing the software.

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What you need for this book

In addition to the CiviCRM software itself (freely available from `http://civicrm.org`), you will need either Drupal (`http://drupal.org`) or Joomla! (`http://joomla.org`) as the CMS framework in which CiviCRM will reside.

CiviCRM runs on an Apache/MySQL/PHP platform. It requires a fair amount of server system resources more than some other web-based software, including Drupal or Joomla! running on their own. Virtual private servers available from commercial hosting providers are a good option for hosting, and dedicated servers with high availability and high performance server clusters can also be used in more demanding situations. While you may be able to run CiviCRM on shared hosting for small implementations, you will generally find the resource limitations problematic, particularly when your use of the software grows.

For testing purposes or in special circumstances where you want a personal instance, you can set up an implementation on a local machine running:

- XAMPP: `www.apachefriends.org/en/xampp.html`
- MAMP: `www.mamp.info`
- WAMP: `www.wampserver.com`

Throughout this book, we have assumed you are running CiviCRM on a Linux operating system. Some of the configuration tasks require different procedures when running under Windows that are not documented here. Unless you are familiar enough with Linux and Windows that you can translate accurately between crontab and scheduled tasks, file and directory permission systems, and simple Command Prompt/command line commands, you should avoid using CiviCRM on a Windows environment.

This book deals with CiviCRM and thus addresses the Drupal/Joomla! environment as it pertains to CiviCRM integration. Though occasional mention is made of the other technologies used to implement CiviCRM (including PHP, MySQL, Apache, jQuery, and Smarty), no prior knowledge is required to install and configure the software.

Who this book is for

This book is for project implementers, organization leaders, staff, and volunteers in advocacy, non-profit and non-governmental organizations, election campaigns, professional/trade associations, political campaigns and parties, government agencies, and other similar organizations who want to implement CiviCRM in a manner tailored to their organization's size, culture, and needs. It addresses CRM strategists, implementers, administrators, and end users looking to become power users in communicating, fundraising, managing events, memberships, grants, cases, and people-resource management.

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Conventions

In this book you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles and an explanation of their meaning.

Code words in text are shown as follows: "Adding `&search=0` will open the page with just a listing (no search form)."

A block of code is set as follows:

```
{if $receipt_text}
{$receipt_text}
{/if}
{if $is_pay_later}
```

New terms and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "Access these options through **Administer** | **CiviMember**".

Warnings or important notes appear in a box like this.

Tips and tricks appear like this.

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1
Achieving Your Mission with CiviCRM

Most people working in the non-profit sector would love it if their organization could do more with its existing staff and volunteer resources. We often care passionately about the work we do, but lament the wasteful ways we have to do things. Wasted hours, wasted money, wasted contacts, and wasted opportunities! We're tired of being frustrated by the way things are. We want to make a difference, a bigger difference.

Why your organization needs Constituent Relationship Management

Your organization will better achieve its mission with a well-formulated and well-executed Constituent Relationship Management (CRM) strategy. If you're like most non-profit, advocacy, and membership-based organizations, CiviCRM is the best tool for enabling success.

Does your organization lack an integrated system for managing contacts? This is a common issue for non-profit organizations, be they large or small, more or less organized. Can you identify your organization in any of the following situations?

- Do people in your office have their own personal Excel sheet of contacts that they use in their fundraising, volunteer work, or mail merges?
- Do you have one system for e-mail subscribers for your online newsletter, another online system with people who have attended one of your events, a different one containing responses to surveys, and a desktop system for labels for season's greetings cards?

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- Do you have a separate old membership database in Microsoft Access, maybe developed by a volunteer or staff person, long since departed?
- Does your fundraiser have his own system, maybe an expensive one like Raiser's Edge, while your volunteer organizer does everything in Outlook?
- Have you lost access to data when a staff person left?
- Do you have old paper sign-in sheets from people attending events, indicating that they were interested, but haven't been entered in any system?

A contact management system is the heart of every CRM. Yet, CiviCRM is more than just a contact management system. As an integrated online system that handles contacts, donations, event registration, bulk e-mailing, case management, and other functions, such as activity tracking, grants, reporting, and analytics, CiviCRM consistently receives top ratings from non-profit technology users.

A successful CRM strategy can help your organization in many concrete ways. Here are some strategies:

- Improving the frequency, average donation amounts, and/or retention rates of your donors
- At a more basic level, enabling supporters to donate online through your website instead of having to get checks from them and recording everything yourself in your accounting books
- Automating the registration process for members attending an upcoming conference
- Increasing the likelihood of your existing subscribers becoming more involved with your organization and its mission
- Ensuring that more of your members show up to volunteer
- Identifying contacts that are already interacting with your organization who have the right skill set and interests to be worth approaching for a commitment about an open board position
- Making information easily available that quantifies what a great job you've been doing, including the number of hours that volunteers gave to your organization last year, the number of cases managed, and the number of new viral signups from your latest urgent action e-mail

CiviCRM can help in all these areas.

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What is Constituent Relationship Management?

Constituent Relationship Management is the set of processes and supporting technologies used to initiate and improve relationships with constituents. It's important to realize that CRM is not just a technology that is brought into your organization. Managing relationships with constituents involves all of the workflows, processes, and reporting that your organization uses to get things done in order to achieve its mission, and then show how well it has achieved its mission.

Constituent Relationship Management is the non-profit equivalent of *Customer* Relationship Management in the business world. By comparing and contrasting these two concepts, we will understand the purpose and scope of this book better.

Customer Relationship Management versus Constituent Relationship Management

In the business world, Customer Relationship Management systems are used to optimize a company's sales by focusing its resources on those who are likely to buy. They are also used to improve customer satisfaction and lower costs by providing self-service options.

In order to do this properly, these systems track, automate, and personalize all aspects of client interactions across all communication channels, including website, phone, in-store, e-mail, and social media such as Twitter, forums, and blogs. Every time a customer touches the organization in whatever way, the interaction is logged. This information is used to better understand the relationship with the client, and ensure that all the interactions are designed, from one perspective, to maximize the long-term profitability of the client to the business. Typically, Customer Relationship Management systems focus on tracking and enhancing customer interactions in the marketing and sales funnel workflow for new and returning customers, and improving after-sales support. Depending on the industry and the company, CRM systems and techniques might also be used for tracking and enhancing relationships with other stakeholders, such as regulators, shareholders, or media.

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The ideas developed for Customer Relationship Management systems in the business world have been adapted to the needs of the non-profit world in Constituent Relationship Management systems. While increased donations parallel higher business sales, there are slight but significant differences in terminology and processes. For example, good Constituent Relationship Management systems are designed to account for pledges, recurring donations, soft credit donations, and the portion of ticket prices eligible for political or charitable tax receipts. Relations with non-profit stakeholders including media, board members, and granting foundations may also be managed with Constituent Relationship Management systems.

Non-profit organizations have additional critical non-monetary measures of success beyond increased revenue and lower costs. These may include education, service, advocacy, or other outcomes relevant to non-profit missions. Nonprofit CRMs may need to track one or more non-monetary objectives along these lines. For example, in addition to wanting to increase donations as a means to support their mission, an advocacy organization might want their CRM to help them achieve their objective of influencing legislators or voters through means such as more letters to the editor, e-mails, visits to legislators, or forwards to friends. Similarly, a direct service non-profit organization might aim to improve the outcomes of its client cases with their CRM system's case management functionality, or a legislator might aim to assist more voters to access government resources.

Despite these differences, *Constituent* Relationship Management systems are similar to *Customer* Relationship Management systems in aiming to support the growth in numbers and depth of engagement of contacts with an organization.

In the business world, this is usually done by keeping existing customers happy in order to avoid high costs of client acquisition. Similar strategies and techniques apply in the non-profit world, given the generally higher cost of acquiring new donors, activists, volunteers, or members, as compared to retaining existing ones.

A good general strategy in business is to aim to increase the volume of business it receives from its existing clients. For example, this may be done by identifying prospective buyers and communicating better with them on why they would want a more expensive product (up-selling), or why they would want additional related products (cross-selling). It may also be achieved by focusing on increasing repeated business from customers who return more frequently for the same product (for example, to watch movies more frequently).

Non-profit organizations benefit from this strategy, both in fundraising and in non-monetary appeals. Fundraisers aim to increase the recency (that is, how recently each donor has donated), frequency, and monetary value of gifts from their donors.

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For non-monetary contributions, non-profit organizations benefit by focusing on increasing the number of actions taken by the existing activists, such as appeals sent, educational programs attended, or shut-ins voluntarily visited. They also benefit by getting them to undertake actions that require more co-operation from them and result in more impact, such as calling up a call-in show in addition to signing a petition, visiting their elected representative as well as sending him or her a letter, and so on.

Increasing the number and depth of interactions can often involve targeting clients with shared characteristics, such as those who have made several recent low-cost purchases or small donations for a special treatment such as an offer, a special ask, or other follow-up communication.

Another objective may be to ensure that those best suited for a product or service receive such a great experience interacting with a company, that they recommend it to others.

In the for-profit sector, this can involve sales personnel or systems responding more appropriately, given the purchase history of an individual or a company, by offering appropriate discounts, cross-selling or up-selling suggestions, and so on. For example, a long term customer might be offered a discount when he shows up at a website, a computer buyer might be offered small items at checkout time including games for a previously purchased game system, or a client who has made premium purchases might get a more expensive range of products. After-sales support personnel would be provided with the whole record of attempts an individual might have made to resolve a problem, as this often helps narrow down an issue and avoid irritating requests to repeat actions. A complete customer record might show that an individual with a tough problem is considering a major purchase, or that they have had a history of making unauthorized technical changes to the product that might have impaired its functionality and voided its warranty.

In the non-profit world, the parallels might be to encourage:

- A regular attendee at events to come to an upcoming breakfast seminar with a discount
- Users who sign petitions to make a donation
- Those who volunteered more than twice in the past year to consider becoming a board member

Similarly, tech support has parallels in non-profit case management. Imagine how much a non-profit serving "at-risk" youth could benefit from being able to easily pull up the records of someone calling in about depression when those records reveal a caller has a history of suicide attempts.

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In all of the preceding business and non-profit examples, a tiny organization with a single staff person serving a small clientele would be challenged to recognize the individual, remember the history of interactions with them, and act appropriately by providing a discount. More difficult challenges include calling up someone who had stopped coming in, going the extra distance for someone who needs it, or curtailing resources dedicated to a relationship not related to the mission of the organization. Technology helps to scale these appropriate behaviors to situations where many staff members and volunteers have been involved in the interactions with the client or customer. It can help in situations where some of the staff members or volunteers may not have the best memory, and may not have the best judgment as to how to respond in the situation.

Who are your constituents?

We've made an assumption so far that you have a clear concept of your constituents, but it is worth taking the time to define this clearly for your organization. A constituent is any person, household, or organization that has some relationship with your organization. Depending on your organization, it may include:

- Donors
- Funders
- Elected officials you seek to engage, educate, or influence
- Newsletter subscribers
- eNewsletter and action alert subscribers
- Members of your organization
- Coalition members
- Participants in your petition, e-mail, and letter writing campaigns
- Participants in your face-to-face events
- Volunteers
- Clients
- Website visitors
- Board members
- Staff
- Organizations or individuals who are not staff members, but help you deliver programs and services (for example, lawyers volunteering for a pro bono legal services clinic)
- Users or purchasers of your products or services

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- Media outlets and/or personnel your organization contacts
- Advertisers or sponsors of your organization, its events, or publications
- Government agencies who influence policies impacting your organization

In some cases, your relationship with one constituent may need to be through another. For example, a parent might be the constituent who signs up their child for a program, or a staff person might be the contact person for the organization they work for.

Which constituents your organization needs to focus on—individual donors, volunteers, granting agencies, newsletter subscribers—depends on your mission and situation. It's usually good to keep in mind that one person often has many hats and may fall into several categories of constituents.

It's often effective to gather information about a relationship when the constituent can understand why it is needed, and that providing it makes sense. For example, explaining that a mailing address is needed to provide a charitable tax receipt when a donation is being made, asking about food preferences only when someone is purchasing tickets for dinner, or requesting policy interests when signing up for a newsletter helps reduce the burden in any particular interaction, and makes for a more natural deepening of the relationship.

While designing your CRM strategy, you will need to balance the benefits of having information on relationships with your constituents with the costs of acquiring, maintaining, and using it. As you develop your strategy, you should ensure that it focuses on gathering data that will help your organization act effectively, and know that it is acting effectively, in the constituent relationships that are most important to achieving its mission. These are often the constituents with the most transactional encounters with your organization—donors, volunteers, members, event participants, and so on. However, sometimes, a small number of constituents can provide a breakout value—a game-changing, qualitative improvement. For example, investing in some research and wooing a few key media contacts, potential coalition partners, or swing legislators may help your organization realize its mission more than great gains in number and efficiency at other levels.

When is CiviCRM the best CRM?

So far, we have discussed CRMs generically, comparing how they are used in the business world with the non-profit sector. However, there are many options for implementing a CRM, so when is CiviCRM the best CRM? CiviCRM is great for organizations that need to work with a lot of contact data, especially those that want to use sophisticated functionality prebuilt for common non-profit transactional use cases including the following:

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- Donations and pledges
- Events management
- Membership management
- Case management
- Bulk e-mailing

If your organization requires functionality in a couple of these areas, then it is very likely that you would benefit from CiviCRM. CiviCRM's integration with Joomla! and Drupal (popular open source content management systems that are excellent for running your website) also distinguishes it from a number of competing CRMs.

We're going to explain the many reasons why CiviCRM does so well in surveys of non-profit technology users. Still, we want to acknowledge upfront that CiviCRM isn't the right tool for every non-profit to manage its constituent relationships. It depends on your needs and resources, which can make it too big or too small, too feature-rich, or not flexible or powerful enough. This section provides some general guidelines for situations where you might want to consider an alternative to CiviCRM. We have tended to err on the side of excluding some cases, where people can, and have, successfully and happily used CiviCRM rather than including cases where people's expectations may not be met and surpassed.

As a low-end cut-off, your organization needs to have resources to set up, host, and maintain CiviCRM, either by paying a hosting provider and consultants, or by using internal staff resources. Tiny community groups with no budget or IT resources will not be able to afford these costs even though CiviCRM is free open source software without any upfront or ongoing license fees. While the public-facing pages are easy-to-use, administering a CRM also requires a certain amount of tech-savviness to construct searches, set up templates that will be merged with contact data for e-mail blasts, decide on the fields to put on forms, and other similar activities. More advanced skills are necessary for some initial setup tasks such as configuring e-commerce connections to payment processors and designing how to store information among fields representing contacts, their contributions, participation in events, memberships, relations with other contacts, and so on. Not all organizations have these skills available internally, or can afford to outsource for them.

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Thinking through alternatives

If your organization does not have a need for more than one kind of CRM functionality, and especially if your needs are simple in that area, then it might be better to use a single-purpose tool, whether free, purchased, or available through paid subscriptions. Best-of-breed single-purpose tools can provide superior usability, desirable flexibility, lower cost, lower administrative burdens, and higher-end features for that particular functionality. Google, Yahoo!, and numerous other providers of free group e-mail broadcast and discussion software is one example. EventBrite is an example in the events management area; e-mail management systems like ExactTarget can be good for bulk e-mails. Many single-purpose tools have built out some functionality into other areas, but are primarily focused on one area. In contrast, CiviCRM is very good in most of these functional areas. Its superior capabilities across many areas needed by non-profits, advocacy, and membership-based organizations usually sets it above competitors with even moderate CRM functionality.

A downside for many organizations is that they start using one of these services to meet one need, and then adopt a second for a requirement in a different area, and soon end up with multiple data silos, systems that won't talk to each other, or complex data-syncing protocols and issues. Migrating to CiviCRM at that point is common, but the additional hassle of the migration and change in tools and procedures can be avoided by choosing CiviCRM from the start.

A different type of problem confronts organizations that have significant and well-defined needs that are not met by CiviCRM out-of-the-box or through configuration. In these cases, the question is often between building an in-house application and getting an externally-developed application like CiviCRM to do the job. CiviCRM as the base of a custom solution makes sense in a number of these scenarios. Some are specifically listed, as follows:

- When the functionality being developed will be integrated into core (that is, the CiviCRM software that everyone downloads), similar to the case management functionality developed for the Physician's Health Program of British Columbia
- When you have the skills to decode the various technologies used to build CiviCRM or the budget to hire those who can do that
- When you are willing to invest more initially in more general and customizable software, in return for getting the services of other users who will report bugs, improve documentation, submit patches, and enhance the functionality you have contributed
- When you can work with the core team and community effectively, which usually involves more time and a willingness to take other viewpoints and interests into account, which often includes the benefit of others sharing the costs of development

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There are some scenarios when using CiviCRM as a base of custom solution doesn't make sense. For example, it can be cheaper and simpler to build a single CRM feature in Drupal or another CMS, especially if you don't need the rest of CiviCRM's functionality.

The strong advantages of building functionality into a full-fledged CRM also sometimes need to be balanced against the high cost of extending CiviCRM. It is programmed in PHP, Smarty templates, and other technologies such as jQuery using enterprise-oriented n-tier architecture. The variety of libraries and technologies and the size of the codebase have presented barriers for developers hoping to modify or extend the software that the CiviCRM team distributes and maintains. Developing in the CiviCRM project usually results in longer timeframes, higher costs, and a greater difficulty in sourcing personnel for development and maintenance as compared to building the same custom functionality in a rapid application development framework such as Drupal.

Though it wouldn't make sense for your organization to re-implement CiviCRM functionality, it can often make sense to extend CiviCRM with Drupal modules (or perhaps Joomla! extensions), especially with the variety of existing Drupal integration modules available for custom content, views, and access control. It is worth noting that several areas of CiviCRM functionality had been initially developed as Drupal modules. Then, as the use cases became clearer and the demand for integration with other CiviCRM functionality grew, they were re-implemented within CiviCRM itself.

CiviCRM is an open source project that is quite responsive to community needs and contributions to address areas it does not currently cover. Indeed, the project generally extends its functionality by working closely with organizations that can sponsor new functionality or contribute new features back. Instead of hacking the core just for your own implementation, you can improve the core code so that it handles your own needs and those of others with similar needs.

If you search the CiviCRM wiki (`http://wiki.civicrm.org`) and forums (`http://forum.civicrm.org`), and communicate with the core team and the community via the forums, you may find that there are others who are interested in the same functionality and may be able to contribute something to having it built. Even if your needs are unique, there may be ways to generalize them so that they can be met with software that addresses the needs of others at the same time. Autumn 2010 saw some early successes with a **Make It Happen** initiative that helped aggregate support from many users and consultants for several new pieces of functionality.

Alternatively, your forum post may result in suggestions for simple or ingenious workarounds that can suffice in addressing an oddity in your requirements that was holding your organization back from going with CiviCRM.

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While the burden of maintaining your own code in sync with changes in the core is significant, well-resourced organizations sometimes find that it makes most sense to develop custom versions of open source software containing features that are not shared back with the community. Usually, this is because the needs are quite unique, such as integrating with a custom in-house legacy application.

Other CRMs

When deciding on a CRM tool, there are many existing CRM offerings that could be considered. The Nonprofit Technology Network (`http://NTEN.org`) conducts periodic surveys of technology use in the non-profit sector and publishes the results. Though they are heavily focused on North American non-profits, they provide a good indication of CRM market penetration and user satisfaction with common solutions in this very large and influential region.

CiviCRM, Salesforce, and Convio are the three most-used systems in the most recent surveys. Other providers or tools widely used or acceptably rated in these surveys include Antharia, Blackbaud, SugarCRM, Kintera Sphere, DemocracyInAction, and Organizer's Database. Although the cost and functionality are significantly different, AmDocs and Microsoft CRM are other notable CRM systems in the larger non-profit sector, while Salsa sometimes crosses over from its focus on small and medium sized businesses.

Needs vary from one organization that uses a CRM to another. This affects which CRM is best for them. For example, Salesforce has tended to do better with large organizations (those with greater than $3M budget), though the CiviAccount enhancements in 2011 may change this. As you evaluate a CRM tool for your organization, you should take into account the current and expected needs of your organization, as well as the current and anticipated functionality in possible CRMs. Given this caveat, the next section will outline common reasons for adopting CiviCRM over the other alternatives.

Why CiviCRM?

Every organization should do its own evaluation of CRM options using criteria appropriate to their particular needs, weighing each suitably to provide the right overall balance. This section summarizes some of the reasons why CiviCRM is right for many non-profit, advocacy, and member-based organizations.

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Focused on needs of non-profits

More than anything else, what sets CiviCRM apart from other competing programs is that it is designed specifically to meet the needs of non-profits, and provides a well-integrated platform that addresses all their basic needs. This avoids or alleviates the complexities, problems, time, and expenses associated with running separate systems for things such as donations, e-mailing, events, and membership, or trying to programmatically integrate them.

CiviCRM is well-suited to the needs of many kinds and sizes of organizations:

- Non-profits
- Non-governmental organizations
- Government agencies and the offices of elected representatives
- Membership-based organizations
- Advocacy organizations
- Grant giving organizations
- Service providing organizations
- Neighborhood associations
- Political campaigns and organizations
- Business associations
- Government entities
- Unions
- Sports clubs
- Dance studios

Many CRMs are built around common workflows in for-profit businesses that don't always map well into the non-profit world. The sales funnel model and terminology underlying sales force automation, for example, may not map well to the activities in an awareness raising campaign. Substituting some terms and adding some non-profit specific things, as Convio Common Ground does with Salesforce, doesn't always overcome the issues with the underlying model.

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User satisfaction

NTEN's 2007 CRM Satisfaction Survey determined the following:

> *The three systems that were most commonly used by all organizations – CiviCRM, Salesforce, and Convio – were ranked first, second, and sixth, respectively in willingness to recommend respectively.*

NTEN's 2009 Data Ecosystem Survey reinforced this result by finding that the overall happiness of organizations was similar, with grades of B+, B, and B- going to the top three tools: CiviCRM, Salesforce, and Convio, respectively.

No vendor lock-in

A significant problem with many proprietary CRMs is the difficulty organizations face in moving to a different vendor. As a free and open source software system, CiviCRM will always let organizations using it get their data out if they ever want to move to a different system. The ability to directly access and work with your data for customization, advanced database queries, data migration, and so on is often quite important.

Some proprietary systems are only offered by a single vendor. Service outages, poor help response times, or unhelpful technical support responses may leave your organization with no option but to switch to a different CRM just to deal with vendor issues. By contrast, the growing pool of integrators, trainers, and consultants for CiviCRM (`http://civicrm.org/professional`) enables organizations to shift from one provider to another without having to change CRMs.

Unlike with some proprietary systems, there is no vendor lock-in with CiviCRM.

Integration with Drupal and Joomla!

Drupal and Joomla! are commonly used CMSs (Content Management Systems) in the non-profit world. CiviCRM integrates well with both of them. This is important because it allows your CRM to easily present public or staff facing forms and listings on the Web. Easy configuration of donation and event signup forms and self-serve functionality for membership signup and renewals are incredibly important to many organizations.

There are significant differences between the capabilities each content management system provides. The most notable one for CiviCRM is that it has more advanced access control capabilities, and more flexible repurposing of content when integrating with Drupal.

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Drupal's use as a framework for developing customized sites, especially the way it facilitates mashing together data and functionality from numerous existing modules, can take advantage of CiviCRM's significant and growing support for important core and contributed modules. This includes exposing CiviCRM data in Views, Drupal 6 CCK fields for CiviCRM contacts, and synchronization of roles, groups, memberships, and organic groups in various ways. This allows user permissions on your website, e-mail privileges, membership status, group collaboration spaces, and expressed interests in topics to be mixed and matched in interesting and useful ways.

On the Joomla! side, there is a growing list of extensions available that tap into CiviCRM resources to display content in modules, limit access to content authoring, and control user authentication and account creation based on membership status.

In both cases, CiviCRM lets you take advantage of a powerful open source content management system, integrating your contact database directly into your organization's website. CiviCRM has a history of keeping up with developments in both CMSs, and there is every indication that this integration will continue and deepen with Drupal 7 and Joomla! 1.6 support in CiviCRM 4.0.

Total cost

The common saying that free and open source software is free like kittens rather than free like beer applies to CiviCRM. The total cost of ownership of a software system is an important metric for deciding which is more appropriate. Open source software costs for a system like CiviCRM are different from those of proprietary systems. The absence of an upfront purchase cost is not the end of the story. Costs of maintaining the system over its whole life need to be calculated. Instead of one-time purchase costs, or annual or monthly software license costs, there are likely to be additional expenditures on installation, training, and support. Depending on an organization's CRM needs, number of CRM users, and staff competencies, CiviCRM may be less expensive, or sometimes much less expensive, than the other alternatives.

Dynamic open source development

The "free" in "free and open source software" is primarily the freedom to modify the software to meet one's needs (see `http://wiki.civicrm.org/confluence/display/CRM/Developing+with+the+CiviCRM+team`). This is certainly an advantage for many organizations with resources that are unable to get proprietary systems adapted as they require, or that are unwilling to let another organization drive the feature development roadmap and timeframe of their enterprise CRM system.

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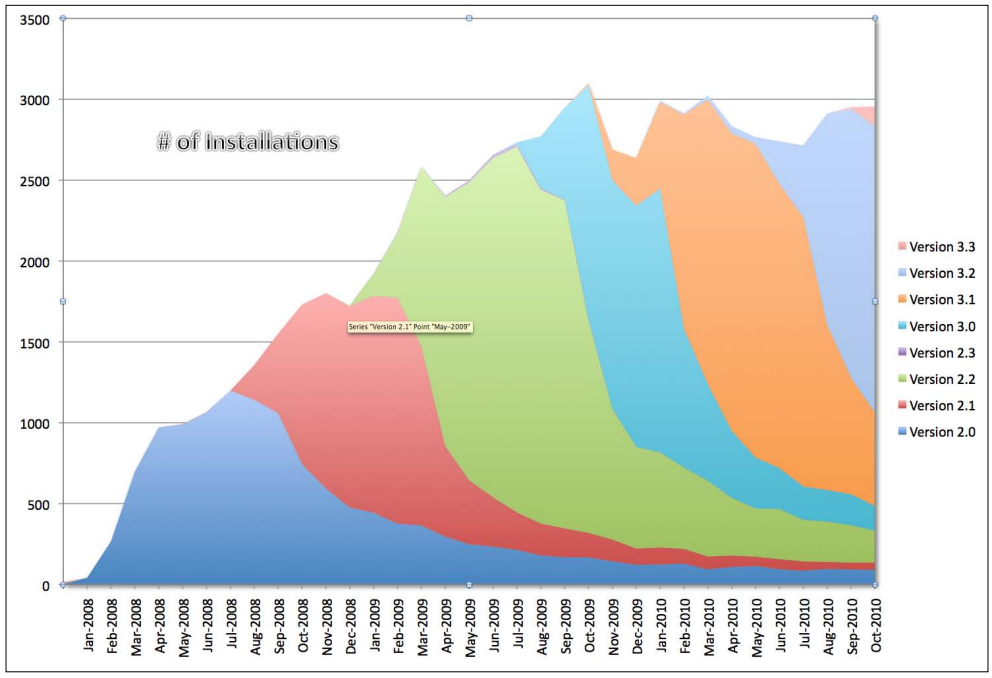
CiviCRM has a strong, growing open source community and software ecosystem. CiviCRM is averaging over 8,000 downloads per month in 2010. There have been over 12,000 installations since version 2.0, with around 3,000 active CiviCRM installations in the fall of 2010 (see the following figure which counts most sites that have had administrative settings changed or reviewed during a month). Note that the apparent growth during 2.0 is greatly exaggerated by not being able to portray upgrades from earlier versions. Also note that the number of active sites is not being directly measured; so during upgrade, there are spikes as new and old sites are both counted, and on-going improvements to the usability and administrative ease of the system is likely to increase the number of active sites that are not counted in the following graph:



In terms of development energy, over 90 individuals and consultants donated to support enhancing CiviCRM during the fall of 2010. In addition to these **Make It Happen** contributions, there have been a large number of other contributions from the community in terms of code patches for new features, forum suggestions have sponsored major new features, including:

- BC Physician Health Program
- Front Line International Foundation for Human Rights Defenders
- Greater Manchester Centre for Voluntary Organisation
- International Mountain Biking Association

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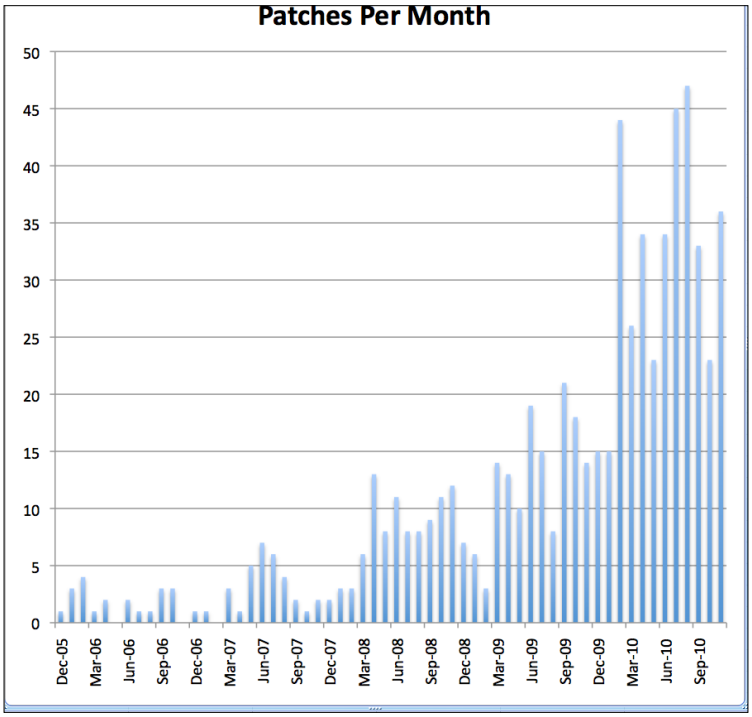
- US Public Interest Research Group
- Quest Scholars
- Alpha International
- New York State Senate
- Progressive Technology Project

The number of issues reported and patches submitted by the community has increased significantly over the years.

While some might perceive more issues being filed by the community as a problem (people are finding the product buggy), it is very healthy from another perspective. For example, the most recent spike in community issues occurred during the alpha and beta testing preceding the major 3.0 release. Community members were encouraged to download, install, and test pre-production versions in order to provide feedback on features, usability, ease of upgrading, as well as bugs before the new version was released. This push was very successful and led to a spike in patches submitted, as illustrated in the following histogram, making it a better and more bug-free release. During 2010, there has been an effort to get consultants and better-resourced users to contribute patches in order to allow the core team to focus on enhancements for new releases.



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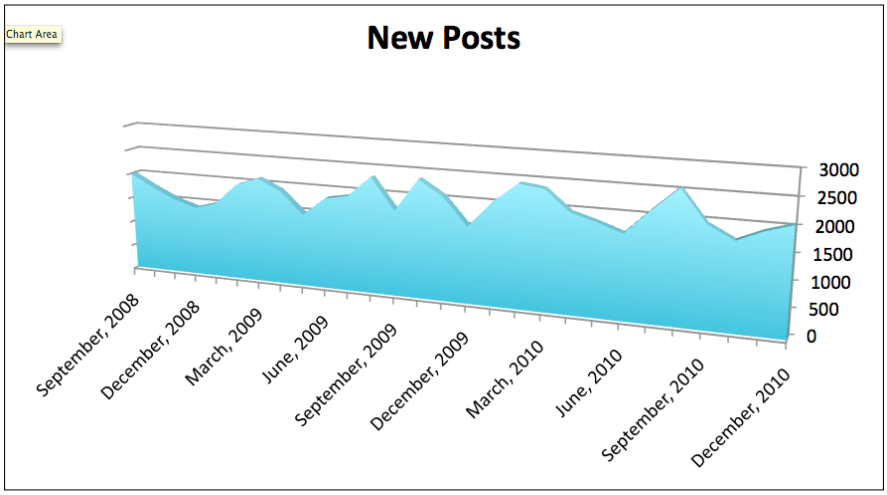
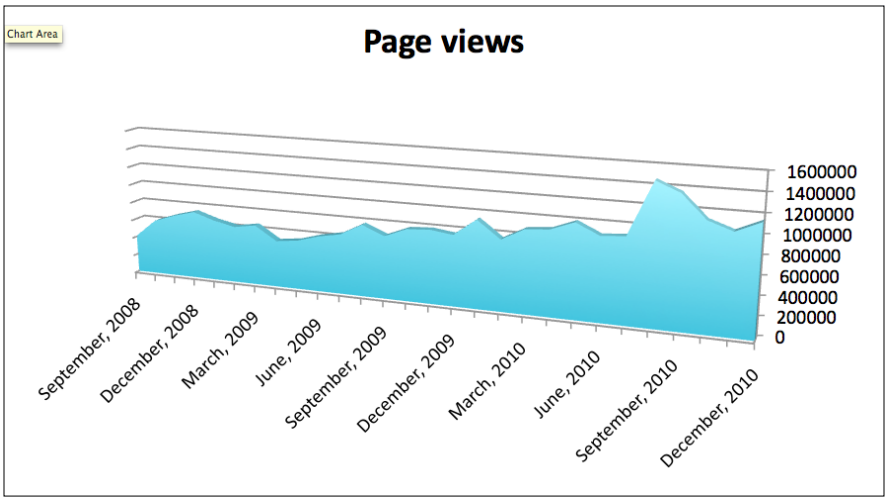
Over 2,000 new posts appeared on the forum per month in 2010, continuing the gradual growth of previous years for this metric.



This relevant new content supported a steady and larger growth in page views, as illustrated in the following graph:



One unique aspect of CiviCRM that sets it apart from many other open source projects is the presence of a core development team working full-time on project development. While community involvement is a great sign of project health, the presence of a core development team has ensured steady releases, an aggressively-planned project roadmap, and more responsive support patching bugs and supporting users.

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Documentation

Extensive administrator, user, and developer documentation available at `http://wiki.civicrm.org` is updated for each version of CiviCRM before it is released. In addition, *Understanding CiviCRM: A Comprehensive Guide* is available for free at `http://en.flossmanuals.net/civicrm`. Often when an issue arises, others have tried to tackle the same challenge, and a record of how they were helped to solve their issue can be found by searching in the community forums at `http://forum.civicrm.org`.

Responsive community support

One of the challenges faced by users of some open source software compared to proprietary software has been the difficulty of assuring that support will be available when needed. In addition to the paid support offerings from numerous professional CiviCRM consultants mentioned previously, the CiviCRM community and core team are renowned for their quick and generous replies to questions in the forums. For those developing in CiviCRM, there is also a #civicrm irc channel on `http://freenode.net`, where one can usually find the core team and other knowledgeable community members responding to more challenging inquiries.

How CiviCRM will help your organization

Good CRM implementations facilitate better outcomes and improved relationships with your constituents shown by, for example, more donations and volunteer time. They also improve staff efficiency and automate workflows, reducing the average cost and time involved in interactions with the constituents. This allows you and your organization to do more. CiviCRM will improve the relationship your constituents have with your organization through various features, including:

- Easier online event registration
- Self-serve membership renewal
- More complete record of history of interactions available to the entire qualified staff
- Automated workflow improvements for case management
- Personalized e-mails
- Anti-spam options to ensure all e-mail communications are permission-based

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Improved relationships also result from deeper changes to the work of an organization. Segmentation of constituents can enable more targeted and effective communication and interaction. For example, sending a text version of your newsletter rather than the normal HTML version to those who have not opened three HTML issues in a row can improve deliverability. Cross-marketing action alerts to frequent donors or donation appeals to frequent activists can be more effective than sending these appeals to all donors or activists, since the latter may end up filling people's inboxes too frequently, leading many to unsubscribe. Surveying those who immediately return for more service on their case can reveal systemic issues in case of management protocols, or quality assurance issues.

Organizations with well-focused and right-sized CRM strategies properly balance the costs of acquiring and updating constituent information against the benefits of having and using it. Staff effort and constituent inconvenience mean that it is often better not to force or even encourage the entry of less important information. Nonetheless, CiviCRM will provide quantitative and qualitative information that can guide actions, inform executive decision-making, and allow balanced scorecard types of reporting to boards and external funders.

Summary

In this chapter we looked at:

- The reasons that organizations choose to adopt a CRM strategy
- The importance of considering the work processes as well as the supporting technologies when developing your Constituent Relationship Management strategy
- The ways in which non-profit constituent relationship management is similar to, but different from, business customer relationship management in objectives and techniques
- How to identify and prioritize the constituents and interactions to be managed by your CRM
- When CiviCRM is more appropriate as a tool to support your CRM strategy rather than single purpose tools, custom software development, or other CRM systems
- The common advantages that CiviCRM provides include:
    - Better focus on non-profit needs
    - Greater user satisfaction
    - Avoidance of vendor lock-in

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    - Excellent integration with popular and powerful Drupal and Joomla! content management systems
    - Lower total cost of ownership
    - A strong and active development community
    - Extensive documentation for all kinds of users
    - Good free and paid support

- The benefits your organization will be likely to see when it adopts CiviCRM

It might be tempting to jump in and start installing and configuring CiviCRM and migrating data from your existing systems. However, our experience is that there are great advantages in developing a CRM implementation plan that identifies, at a minimum, your team, your requirements, and the major tasks that will need to be accomplished. The next chapter will walk you through how to develop a CRM implementation plan that is suited to your organization's size, culture, and needs.

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2
Planning Your CRM Implementation

So now, you think that your organization will better accomplish its mission with CiviCRM. This chapter will help you plan your implementation of CiviCRM, so that your CRM initiative has the best chance to enable greater organization success.

In this chapter, we will do the following:

- Identify potential barriers to success and learn how to overcome them
- Select an appropriate development methodology
- Build a balanced team
- Get started by measuring baseline metrics, creating a vision, and creating a plan
- Focus your CRM strategy first on your constituents and mission, and then on operational efficiency
- Review effective ways to gather requirements
- Identify specific types of requirements to be examined in each of the major areas of CiviCRM functionality
- Itemize elements of a good implementation plan
- Review how to calculate the total cost of ownership of CRM systems and their alternatives
- Plan for success

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This chapter speaks to people who have the responsibility for initiating, scoping, and managing development and implementation for the CRM strategy. The initial sections of the chapter especially are management-oriented. The material on improving constituent relationships is often non-technical, and not specific to CiviCRM. We have written it so that it primarily addresses executives, directors, and managers at medium and large-sized organizations. The personnel in smaller organizations should also benefit, even though they may need to scale down the suggestions. For readers who are technical and/or do not have managerial or executive responsibilities, this section should provide a good context for your work, and may help you advise managers and executives who do not have experience with CRM strategy development and implementation.

The latter parts of the chapter focus on identifying your organization's requirements for CRM functionality in different areas such as communication, membership, fundraising, and events. These sections are intended to help with brainstorming techniques that could be a part of your organization's overall CRM strategy. Although executives and managers of these areas are responsible for deciding which techniques they will use, technical staff wanting to elicit requirements from them will find numerous suggested questions.

Of course, you might be a semi-technical person who's trying to solve the database problem at a small non-profit with a three-member staff. If this is sounds more like your situation, then the initial parts of this chapter may provide inspiration on where you would like to aim, while the latter parts will provide useful ideas and suggestions that will be more immediately and practically relevant as you plan your work.

If you already have CiviCRM or another CRM operating in-house without a CRM strategy, it's not too late to be more methodical in your approach. The steps below can be used to plan to re-invigorate and re-focus the use of CRM within your organization as much as to plan a first implementation.

Barriers to success

Constituent Relationship Management initiatives can be difficult. At their best, they involve changing external relationships and internal processes and tools. Externally, the experiences that the constituents have of your organization need to change, so that they provide more value and fewer barriers to involvement. Internally, business processes and supporting technological systems need to change in order to break down departmental operations' silos, increase efficiencies, and enable more effective targeting, improved responsiveness, and new initiatives. The success of the CRM projects often depends on changing the behavior and attitudes of individuals across the organization, and replacing, changing, and/or integrating many IT systems used across the organization.

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Succeeding with the management of organizational culture change may involve getting staff members to take on tasks and responsibilities that may not directly benefit them or the department managed by their supervisor, but only provide value to the organization by what it enables others in the organization to accomplish or avoid. As a result, it is more challenging to align the interests of the staff and organizational units with the organization's interest in improved constituent relations, as promised by the CRM strategy. This is why an Executive Sponsor, such as the Executive Director of a small or a medium-sized non-profit organization, is so important.

On the technical side, CRM projects for reasonably-sized organizations typically involve replacing or integrating many systems. Configuring and customizing a single new software system, migrating data to it, testing and deploying it, and training the staff members can be a challenge at the best of times. Doing it for multiple systems and more users multiplies the challenge. Since a CRM initiative involves integrating separate systems, the complexity of such endeavors must be faced, such as disparate data schemas requiring transformations for interoperability, and keeping middleware in sync with changes in multiple independent software packages.

Unfortunately, these challenges to the CRM implementation initiative may lead to a project failure if they are not realized and addressed. The common causes for failure are as follows:

- Lack of executive-level sponsorship resulting in improperly resolved turf wars.
- IT-led initiatives have a greater tendency to focus on cost efficiency. This focus will generally not result in better constituent relations that are oriented toward achieving the organization's mission. An IT approach, particularly where users and usability experts are not on the project team, may also lead to poor user adoption if the system is not adapted to their needs, or even if the users are poorly trained.
- No customer data integration approach resulting in not overcoming the data silos problem, no consolidated view of constituents, poorer targeting, and an inability to realize enterprise-level benefits.
- Lack of buy-in, leading to a lack of use of the new CRM system and continued use of the old processes and systems it was meant to supplant.
- Lack of training and follow-up training causing staff anxiety and opposition. This may cause non-use or misuse of the system, resulting in poor data handling and mix-ups in the way in which constituents are treated.
- Not customizing enough to actually meet the requirements of the organization in the areas of:
    - Data integration
    - Business processes
    - User experiences

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- Over-customizing, causing:
    - The costs of the system to escalate
    - The best practices incorporated in the base functionality to be overridden in some cases
    - User forms to become overly complex
    - User experiences to become off-putting
- No strategy for dealing with the technical challenges associated with developing, extending, and/or integrating the CRM software system, leading to:
    - Cost overruns
    - Poorly designed and built software
    - Poor user experiences
    - Incomplete or invalid data

However, this does not mean that project failure is inevitable or common. These clearly identifiable causes of failure can be overcome through effective project planning.

Perfection is the enemy of the good

CRM systems and their functional components such as fundraising, ticket sales, communication with subscribers and other stakeholders, membership management, and case management are essential for the core operations of most non-profits. This can lead to a legitimate fear of project failure when changing them. However, this fear can easily create a perfectionist mentality, where the project team attempts to overcompensate by creating too much oversight, too much contingency planning, and too much project discovery time in an effort to avoid missing any potentially useful feature that could be integrated into the project. While planning is good, perfection may not be good, since perfection is often the enemy of the good.

CRM implementations risk erring on the side of what is known, somewhat tongue-in-cheek, as the MIT Approach. The MIT approach believes in, and attempts to design, construct, and deploy, the "Right Thing" right from the start. Its big-brain approach to problem solving leads to correctness, completeness, and consistency in the design. It values simplicity in the user interface over simplicity in the implementation design. The other end of the spectrum is captured with aphorisms like "Less is More," "KISS" (Keep it simple, stupid), and "Worse is Better". This alternate view willingly accepts deviations from correctness, completeness, and consistency in design in favor of general simplicity, or simplicity of implementation over simplicity of user interface. The reason that such counter-intuitive approaches to developing solutions have become respected and popular is the problems and failures that can result from trying to do it all perfectly from the start.

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Neither end of the spectrum is healthier. Handcuffing the project to an unattainable standard of perfection, or over-simplifying in order to artificially reduce complexity will both lead to project failure.

There is no perfect antidote to these two extremes. As a project manager it will be your responsibility to set the tone, determine priorities, and plan the implementation and development process. Although it is not a perspective on project management, one rule that will help achieve balance and move the project forward is "Release early, release often." This is commonly embraced in the open source community where collaboration is essential to success. This motto:

- Captures the intent of catching errors earlier
- Allows users to capture value from the system sooner
- Allows users to better imagine and articulate what the software should do through ongoing use and interaction with a working system early in the process

Development methodologies

Whatever approach your organization decides to take for developing and implementing its CRM strategy, it's usually good to have an agreed upon process and methodology. Your processes define the steps to be taken as you implement the project. Your methodology defines the rules for the process, that is, the methods to be used throughout the course of the project. The spirit of the problem solving approaches just reviewed can be seen in the **Traditional Waterfall Development** model and in the contrasting **Iterative and Incremental Development** model.

Projects naturally change and evolve over time. You may find that you embrace one of these methodologies for initial implementation, and then migrate to a different method or mixed-method for maintenance and future development work. By no means should you feel restricted by the definitions provided, but rather adjust the principles to meet your changing needs throughout the course of the project. That being said, it's important that your team understands the project rules at a given point in time, so that the project management principles are respected.

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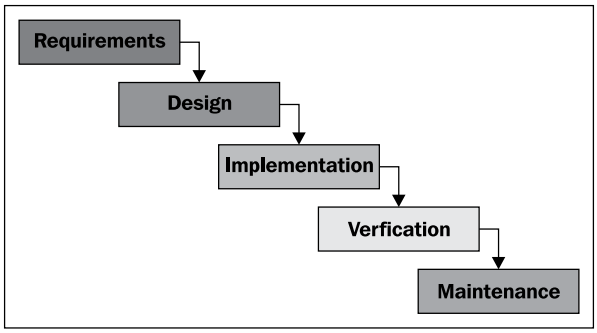
The conventional Waterfall Development methodology

The traditional Waterfall method of software development is sometimes thought of as "big design upfront". It employs a sequential approach to development, moving from needs analysis and requirements, to architectural and user experience, detailed design, implementation, integration, testing, deployment, and maintenance. The output of each step or phase flows downward, like water, to the next step in the process, as illustrated by the arrows in the following figure:



The Waterfall model tends to be more formal, more planned, includes more documentation, and often has a stronger division of labor. This methodology benefits from having clear, linear, and progressive development steps in which each phase builds upon the previous one. However, it can suffer from inflexibility if used too rigidly. For example, if during the verification and quality assurance phase, you realize a significant functionality gap resulting from incorrect (or changing) specification requirements, then it may be difficult to interject those new needs into the process. The "release early, release often" iterative principle mentioned earlier can help overcome that inflexibility. If the overall process is kept tight and the development window short, you can justify delaying the new functionality or corrective specifications for the next release.

Iterative development methodology

Iterative development models depart from this structure by breaking the work up into chunks that can be developed and delivered separately. The Waterfall process is used in each phase or segment of the project, but the overall project structure is not necessarily held to the same rigid process. As one moves farther away from the Waterfall approach, there is a greater emphasis on evaluating incrementally-delivered pieces of the solution, and incorporating feedback on what has already been developed into the planning of future work, as illustrated in the loop in the following figure:

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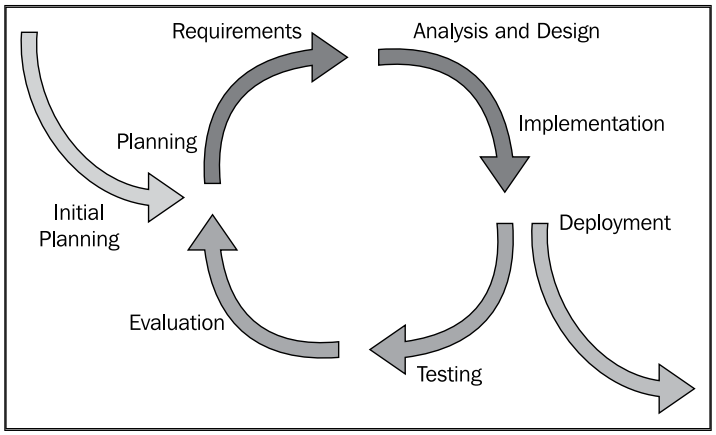

This methodology seeks to take what is good in the traditional Waterfall approach—structure, clearly-defined linear steps, a strong development/quality assurance/roll out process—and improve it through shorter development cycles that are centered on smaller segments of the overall project. Perhaps the biggest challenge in this model is the project management role, as it may result in many moving pieces that must be tightly coordinated in order to release the final working product.

Agile development methodology

Agile development methodologies are an effective derivative of the iterative development model that moves one step further away from the Waterfall model. They are characterized by requirements and solutions evolving together, requiring work teams to be drawn from all the relevant parts of the organization. They organize themselves to work in rapid one to four-week iteration cycles. Agile centers on time-based release cycles, and in this way, differs from the other methodologies discussed, which are oriented more toward functionality-based releases.

The following figure illustrates the implementation of an Agile methodology that highlights short daily Scrum status meetings, a product backlog containing features or user stories for each iteration, and a sprint backlog containing revisable and re-prioritizable work items for the team during the current iteration.

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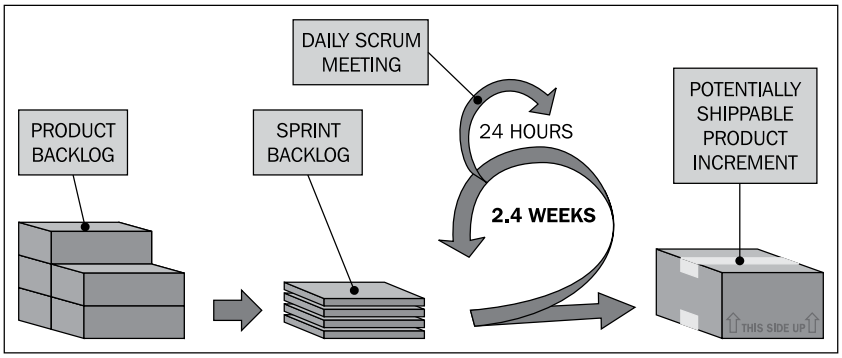
A deliberate effort is usually made in order to ensure that the sprint backlog is long enough to ensure that the lowest priority items will not be dealt with before the end of the iteration. Although they can be put onto the list of work items that may or may not be selected for the next iteration, the idea is that the client or the product owner should, at some point, decide that it not worth investing more resources in the "nice to have, but not really necessary" items.



As one might expect, this methodology relies heavily on effective prioritization. Since software releases and development cycles adhere to rigid timeframes, only high priority issues or features are actively addressed at a given point in time; the remainder issues falling lower on the list are subject to reassignment for the next cycle.

Food Pantry Association of Greater Metropolis

Throughout the rest of this book we will use a case study to help introduce concepts and explain how to configure, customize, and use CiviCRM. While the organization and names are entirely fictitious and not intended to refer to actual organizations or people, the organization's needs and how it operates are intended to reflect common patterns in the non-profit and advocacy sector.

In our case study you are in charge of all administrative functions including computer systems and finances for The Food Pantry Association of Greater Metropolis. FPAGM is the central organization in the food pantry system in the city of Metropolis and its surrounding areas. The pantries, known elsewhere as food banks, range from small faith-based groups to a few larger not-for-profits in the center of the only large city in the area. The pantries provide the poor with food to be taken home for consumption later, and are kept particularly busy during the winter months in this city of approximately 2.1 million people.

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FPAGM envisions a community where no one suffers from hunger. Its mission is to provide cost-effective shared services to food pantries in the region. Operationally, FPAGM does the following:

- Provides wholesale food pickup from business donors, storage at a depot, and regular delivery of needed supplies to pantries
- Shares best practices amongst food pantries and food pantry donors
- Begins assisting pantries in dealing with problematic individuals who abuse the system or staff
- Represents the concerns of the pantries to local and state advocacy efforts, often by undertaking research and developing policy submissions

The FPAGM Board of Directors consists of four officers and five members-at-large. Your boss, the Executive Director, oversees the work of five full-time staff. In addition, the organization receives regular volunteer support to assist with daily operations.

As before, most staff resources are taken up with providing food distribution services for the pantries. Affiliate members and other food providers contact the FPAGM when they have surplus food available for pickup. The association owns three vans for transporting food from the providers to a warehouse attached to the FPAGM offices, and then distributing it to the pantries.

The FPAGM staff also handles distribution. The pantries place requests for food and the costs (measured by weight) are tracked against their accounts.

This system allows the pantries in the region to focus on providing food and services to clients, poor members of the community, without much need to identify food supply sources. The association also benefits from economies of scale, particularly with warehouse space, staff, and vehicles required to distribute food to the pantries.

The association hosts two training events and an annual conference that draws attendees from the entire state who are involved in food pantry support.

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Right-sizing the process

It's important to ensure that the process and methodology you adopt for your CRM initiative is appropriate to your organization's culture and size, the complexity of its existing systems, and the scale of your CRM effort. This goal of "right-sizing" the process to fit your needs is essential, both for you as the project manager/decision maker, and for any consultants you engage in the process. Besides having familiarity with your methodology of choice, the project team (organization leaders, staff, and consultants) should understand and appreciate how you have right-sized the project. For example, if you represent a small organization with two to five staff members, a volunteer board and committee structure, and 3,000 contact records, building too much structure and process into your project will impede efficient progress rather than helping it. You need enough structure to make sure that the project is well-defined, well-managed, effectively tested, and implemented on time and within budget; but not so much structure that you spend all your time managing the methods instead of implementing a CRM.

Other things being equal, larger, older, and more hierarchical, formal and bureaucratic organizations tend to need a more formal approach with more documents, more approvals, and so on. Smaller, newer, flatter, matrix-managed, and more flexible organizations will find it easier to move along the spectrum towards the Agile methods.

Tiny organizations or initiatives may not need to iterate because the scope of work is too small. A project intending to replace a single existing CRM system with CiviCRM may find it better to proceed in a single product rollout to reduce the effort involved in running old and new systems in parallel. By contrast, replacing a number of separate siloed systems with CiviCRM can be grouped into one or more iterations for each system being replaced.

Sometimes, it can be useful to pilot CiviCRM in an important, urgent, or easy area. You might want to reach for a low-hanging fruit by automating event registration for the first time. Another strategy would be to tackle the toughest area first, so that you don't get half-way down a path of converting to a new CRM before you realize there are some aspects of your needs that will require more customization than originally envisioned. By tackling the elephant in the room first, you can reallocate resources to ensure your critical functionality areas are fully addressed.

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Building the team

A critical factor in the success of your CRM initiative will be deciding who is on your strategy and implementation team. The size of the team will obviously vary between organizations; those with three staff members will have to do things differently than those with 300. While this section is oriented towards larger organizations, the principles apply to any size.

The implementation team includes the people who will play a direct role in the ongoing project development. Not everyone affected by the CRM initiative needs to be on this core team tasked with driving the strategy and implementation. A good working group seldom is larger than six to eight people, and very often, a smaller group can be more effective. What is most important is that this team should be representative of the different voices of the project—organization, leadership, end users, developers/implementers, important stakeholders, and so on.

Usually, it is immediately clear that the involvement and cooperation of some individuals in the organization will be necessary for the success of the initiative. In addition, it is important to have a variety of people representing different roles on the team. The team members must bring the right mix of expertise and experience to the project, be willing to work together to effectively accomplish what needs to be done, and work in order to ensure that the perspectives and needs of all the affected parts of the organization are heard and weighed appropriately. If you have tight links to external stakeholders, involving them in your CRM strategy development and testing before roll-out can dramatically improve the success of your initiative.

From a human resource perspective, a transformational initiative such as this one is a great opportunity to provide emerging leaders with a stretch assignment for their talent and ambition, experience in matters beyond their current job responsibilities, and exposure across the organization. The senior team members can evaluate and provide feedback to them as they stretch their wings.

As representatives for the initiative inside and outside the organization, the team members are ideally placed with the goal to advocate and evangelize for their own sub-constituencies in support of the overall CRM vision. What do we mean by that? Each member of the team should represent a voice in your organization—management, front line staff, communication, accounting/bookkeeping, event coordination, advocacy, end user constituents, developers, different kinds of external stakeholders, and so on, each with their own expectations, goals, and concerns with the CRM implementation. The combined diversity of perspective is essential in order to achieve a well-balanced and effective team.

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You'll need to judge whether people who are likely to be resistant to change, or to the initiative in general, should be brought into the tent early or late. Their opposition or reluctance may be due to their personality, a pattern of conflict with a team member, institutional factors such as loss of control of data or budget, or perceived criticism, as systems and work in their area of responsibility are targeted for improvement. Our experience is that it is usually better to bring them in early so that their voices can be heard and their concerns addressed during the implementation. Obtain their buy-in to the project early in order to reduce the likelihood of them poisoning the perception when it's time for organization-wide adoption. This also makes it less likely that they will be taking pot-shots at the initiative from the sidelines, and will be unable to legitimately claim at their end that their concerns were not given due consideration. Acknowledge and incorporate as many positive aspects from the existing ways of doing things as possible and ensure that there is adequate opportunity for familiarization and training with the new system in order to encourage that buy-in. Skeptical voices are valuable when they help to provide a reality check on optimistic ambitions, but can become poisonous if they veer towards unreasonable negativity.

The ideal team may include:

- An executive or board sponsor of the initiative who is able to:
    - Articulate the vision
    - Allocate adequate resources
    - Resolve issues that may arise between departments
- One or more key functional managers with the following functions:
    - Communication, including newsletters
    - Events, which may include different parts of the organization such as those responsible for annual conferences, educational programs, outreach events, a speaker's bureau, and fundraising dinners
    - Volunteering recruitment and management
    - Case management including intake, assignment, and follow-through
    - Membership management
- One or more key staff users, especially administrative staff, who operate the existing system(s) and know how normal transactions and exceptions are actually handled. It includes individuals with deep institutional knowledge about how and why the processes and workflows developed will be particularly helpful.

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- Technical expertise, in-house and/or consultant, covering:
  - CiviCRM
  - Your CMS, either Drupal or Joomla!
  - Software systems to be integrated into CiviCRM, if any
  - Legacy software systems to be replaced by CiviCRM, if any
- External stakeholders, especially when their stake in your organization's success is significant.

Your Executive Director at FPAGM, Mojan Ahmed, undertook a systematic review of the organization and its processes, three months into her tenure. The six-month exercise has included the board of directors, staff, key players from the food pantries (also known as food banks), food donors, volunteers, staff from local politicians' offices, and a bureaucrat from the city. A key outcome of the review was the decision to invest in a new information system. Her judicious selection of stakeholder representatives has resulted in early assurances that the city government and a local philanthropic foundation will provide grants that will cover the anticipated cost of the CRM implementation and associated training together.

While not necessary on the core team, it can be quite useful to involve representative users at various points in the process:

- For feedback on the existing system, and how it could be improved
- For feedback on the design of the new system
- As testers of the user experience
- As testers of functionality in the system

Factors to consider while selecting users is to ensure that there is:

- Good coverage of the functionality in the system by selecting users who play diverse roles, such as:
  - General public
  - Members of the organization
  - Events administrator
  - Volunteer
- Testing by users with different levels of technical sophistication and appropriate interfaces as expected by their role:
  - Techno-phobes

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- Tech-savvy users
- Power users

The ease of setting up and administering online surveys these days means that you should consider whether it may be more efficient and effective to survey a larger number of constituents, rather than having meetings and testing sessions with a smaller number. The former generally provides better quantitative data on known questions, while the latter provides better qualitative data that can lead to new insights and out-of-the-box thinking.

As you construct your team and consultation/feedback mechanisms, it's important to keep in mind that the best CRM initiatives involve changes to work processes and organizational culture, as well as implementation of new information systems. Communication about the CRM initiative will necessarily occur via your team, consultation protocols, and training sessions, as well as the other mechanisms such as staff newsletter articles that you may want to put in place, particularly in large organizations. The efforts expended on consultation and involvement of staff and volunteers throughout the process can lead to worthwhile results with respect to organizational change, even if few technical changes take place. Your aim should be to develop proper organizational alignment with the CRM vision and objectives, which will help people feel more responsible for things they have contributed toward, approved, and shaped.

Two months after the arrival of the new Executive Director of FPAGM, Mojan Ahmed, there was an unfortunate showdown with the longest serving staffer, who insisted on continuing to respond to last minute requests from pantries (that is, food banks) for changes in their orders. This often led to a need to do special runs to suppliers, unpaid overtime for volunteers and staffers needing to redo the work, and occasional delays in deliveries the next day. Backed up by the Board, Mojan prevailed. Now that they have become used to getting their orders in by the agreed upon deadline, pantries are finding that the service has improved in other areas, such as deliveries arriving on time with fewer errors and omissions in their contents.

As your team and methodology falls into place, consider using a project management tool to help track issues as they arrive, document every step of the process, define milestones and release targets, and keep your team members honest. This is particularly important if you are a large organization with many stakeholders involved in the process. Having an electronic "paper-trail" to reference is critical as you work through the decisions, define specifications, and roll-out the software. There are a number of excellent web-based project management tools that can be used for this purpose.

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Getting started

At the beginning of a CRM project you'll need to do some planning, whether this means creating a feature backlog for the discovery phase of an Agile process, pre-planning for an iterative process, or the initial work in the planning phase for a Waterfall process. What planning you should do and when you do it will vary depending on the process adopted for your CRM project, the general management practices for approving and analyzing projects in your organization, and possibly the requirements of external funders such as foundations and other grant-giving organizations.

The following outline of preliminary activities includes some items that may not be required by less formal and less structured organizations. Even if, despite our advice to the contrary, you're treating your CRM project as limited exclusively to the technical implementation of one or more CiviCRM components like online donation processing, we'd encourage you to review this section for ways to make it a success.

While the list is arranged according to the general order it should be done, you should expect and plan for iteration. The later sections will expand on certain items, particularly the ones associated with requirements for specific components of CiviCRM, but it's better to start at a broader, higher level.

Creating a baseline

Assuming that improvements are desired, develop an inventory of the current state of customer relationship management in your organization:

- Create a list of the main types of constituents that interact with your organization such as volunteers, donors, attendees, board members, staff members, website visitors, and so on.
- For each type of constituent, list the important types of interactions that can occur with your organization.
- Identify actionable metrics that measure the quantity and quality of relationships. Wherever possible, collect information for each metric or put in place ways of collecting the information in order to create a baseline of information about constituent relationships. Ideally, these metrics should provide meaningful ideas on what you should do. The trend revealed by the number of new twitter followers per week is better than the total number of twitter followers, since the former will help you perceive spikes more clearly that will help you identify effective message language or key influencers to reach out to.
- Create a technical inventory of all systems that interact with constituents. At a more detailed level, perhaps in later phases, create a data dictionary of all tables, fields, and their meanings related to constituent information, transactions, and interactions.

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- List the known pain points in the current way of doing things that need to be addressed, for both internal resources like staff or key volunteers, and external constituents like case clients or website visitors.
- SWOT analysis (internal strengths, internal weaknesses, external opportunities, and external threats) is a good tool for some of this work.

FPAGM Memberships

An example of the kind of baseline information that is good to collect is memberships.

FPAGM is simplifying its organizational structure in various ways, including moving from nine to three membership categories. Historical differences between the small rural church pantries and the larger urban, secular, non-profit organizations, and between the small restaurants and large food distributors, will be dealt with through board representation, program operations, and fees. The new membership categories are:

- **Regular**: Food pantries in the region are eligible to become Regular Members of the Association, and all but one has already done so. Pantries who join the Association agree to adhere to a code of conduct, which includes statements concerning non-discriminatory practices and a willingness to work collaboratively with other pantries towards the goal of fairly and charitably reaching the needs of the area's poor. FPAGM currently has 43 regular members. The annual fee is $250.

- **Affiliate**: Organizations that donate food to pantries in the region are eligible to become Affiliate Members of the Association. 127 have done so, including a produce distribution centre, two food wholesalers, a grocery store chain, several other local grocery stores, and a large number of restaurants. These businesses support the Association through their involvement in the organization, as well as through providing surplus food for distribution to the pantries. The annual fee is $100.
- **Supporting**: Individuals or organizations that embrace the mission of the Association and support it through monetary donations and through service or in-kind may choose to become Supporting Members. FPAGM currently has 56 supporting members. While the minimum annual fee is $50, some have given considerably more.
- The Regular and Affiliate categories operate on one-year membership periods from January 1 through December 31. Supporting members operate on a one-year rolling period by default, though the size of the gift may dictate a longer membership period at the discretion of the Executive Director and Board of Directors. Employees of any member organizations inherit membership benefits by virtue of the parent organization.

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Developing the vision

Develop a shared vision for the desired state of your CRM and its place in your organization:

- The vision can be the basis of planning goals and metrics for measuring success.
- During this work, focus on the mission of the organization, and how it is realized through relationships with constituents.
- List CRM functionality and features that helped motivate the project, for example, online events registration, including payments.
- List possible ways of overcoming current pain points, for example, data silos between staff or departments.
- Focus on the user experience of your organization in the typical interactions that your constituents have with you. Alternate between big picture identification and examination of constituent segments (either analytically through data analysis or anecdotally through staff and expert exposition), and close up details of specific users and incidents.
- Pay attention to the funnel(s) of prospects for high-value types of constituents. Depending on your organization and mission, these may be volunteers, activists, donors, new members, or others such as the public your organization is trying to educate about something. Clarify the steps on the ladder of engagement for these types of constituents (for example, website visitor, newsletter subscriber, online activist, event attendee, donor, in person volunteer, or board member), and the value proposition at each step. Consider new business activities such as creating a free monthly newsletter to acquire prospects, or premium members-only pre-event meet and greet gatherings to help with volunteer recruitment.
- Put specific energy into brainstorming:
    - Ways to reduce time-consuming and repetitive tasks of staff and volunteers, for example, making more processes self-serve online
    - Eliminating some tasks altogether if they do not adequately help the organization to realize its mission
    - Imagining new ways to accomplish your mission, for example, beginning to use viral marketing and social media
    - Optimizing business processes for external experience, internal efficiency, and general usefulness before automating them
- You may want to consider articulating the desired goals and metrics using SMART (Specific, Measurable, Attainable, Relevant, Time-bound) project management criteria for more controlling and formal organizations or DUMB ones (Doable, Understandable, Manageable, Beneficial) for less management-heavy ones (visit `http://en.wikipedia.org/wiki/SMART_criteria`).

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The food pantry needs of the greater Metropolis community have grown significantly over the last few years, and FPAGM seeks to find ways to increase the operational efficiency while providing greater levels of service to its members.

Further, your members have expressed a desire to increase networking and cooperation among each other. In particular, they want to learn from shared experiences and find ways to discourage people from abusing the services provided (pantry hopping). Recent resistance from the city government has forced the Association to take a more aggressive role in state and local advocacy such as ensuring that laws and regulations that support the mission of the organization are put in place. This means that FPAGM must look for ways to present its issues, concerns, vision, and constituents in a more public fashion.

All of this has led your organization to begin the process of rebuilding their website and implementing constituent relationship management software. You chose Joomla! as the content management system for your website because of its ease of use for administrators and the variety of extensions available for building the site functionality. You've selected CiviCRM for your contact management needs because of the diverse toolset it will provide, both for your immediate contacts, members, event management needs, and future goals in order to begin case management tracking.

You anticipate using online membership forms to solicit members, profiles for member contact detail management, event registration forms for training events and the annual conference, and contribution forms for members to place orders to the organization for food delivery. They also plan to have online donation pages and may begin having periodic campaigns for more focused fundraising efforts.

You plan to develop appropriate metrics as your next step in developing FPAGM's CRM plan.

Creating a project plan

Create a preliminary project plan as follows:

1. Determine the project scope.
2. Estimate a timeline for software release(s), major stakeholder communication, training, and other project milestones.
3. Estimate the monetary, human, and technical resources required, providing the basis for a preliminary budget of the total cost of ownership for all phases of the project, including both the implementation and ongoing annual costs.

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4. Estimate the benefits in terms of the following:
    - Cost saving through efficiencies (staff time able to be redeployed, switching some communications from postage and printing to e-mail, and so on)
    - Increased revenue generation (donations, ticket sales, and so on)
    - Mission-oriented success metrics or proxies for them
5. Sample metrics may include:
    - Clients served (number of cases, time to resolution, number of repeat clients, client evaluations of service and organization, and so on)
    - Number of events offered
    - Ticket sales (number and value)
    - Donations (number of donors, frequency of giving, recency of latest donation, and average amount of donation)
    - Bequests arranged and received
    - Memberships (number, geographic, sectoral, or other sort of coverage of target audience)
    - Volunteers (number, frequency, recency, average number of hours, higher value kinds of volunteering, and so on)
    - Grants (applications received, processed, average time of processing, number approved, and so on)
    - Newsletter subscribers (number, churn rate, opens, click-throughs, completions of calls to actions, and so on)
    - Media (number of mentions, reach, and tone of coverage)
    - Web traffic (number of unique visitors, repeat visitors, length of stay, forwards to friends, number of Facebook fans, number of Twitter followers, number of re-tweets, and so on)
    - Search engine (page rankings for various key terms)
6. Set out the assumptions underlying the plan.
7. Identify risks to the project success that will need to be reduced, mitigated, or otherwise managed.
8. Combine the budgeted costs with the estimated benefits to develop a projection of the financial and non-financial return on investment.

Depending on the scope of your project and how you view it with regard to your overall mission, a more extensive environmental analysis (such as the SWOT method: strengths, weaknesses, opportunities, and threats) could prove useful during this stage. Though you may look at the CRM initiative as largely an IT function, the reality is that it will impact every facet of your organization, and thus should be viewed from this macro level. A review of business process re-engineering could also be considered as an early activity because of its general importance and opportunity to think cross-functionally.

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Total cost of ownership

We just mentioned in the previous section the need to calculate the total cost of ownership in order to provide a sense of the expected return on investment in a CRM initiative. The initial cost of acquiring and deploying software systems is usually a fraction of their total cost of ownership. This is especially true for enterprise systems like CRMs that tend to have longer effective lives.

Although CiviCRM, Drupal, and Joomla! are free open source software projects, they do have costs associated with them. In addition to training for users, administrators, and any in-house developers you may have, there is a need for on-going maintenance and support of your software and data.

Security upgrades or patches need to be applied regularly to your CMS software. CiviCRM includes security fixes in its general releases. We recommend upgrading at least a few times a year as new versions are released (for example, 3.2), but not necessarily for each point release (for example, 3.2.2). One advantage of this is the ability to take advantage of new features as they are released. If you have customized or overridden CiviCRM functionality, you should expect there to be some costs associated with modifying the custom templates and software on your site during upgrades.

A major reason why software costs are ongoing for organizations is that organizations are not static. What your organization does and how it does it, will change, both as you implement your CRM initiative and after it is put to bed. The interlinked nature of work processes and software systems means that you will need to continue to adapt, reconfigure, and re-customize CiviCRM for as long as your organization uses it.

A second area where organizations need to plan for ongoing resources for a CRM system is keeping their data clean. Depending on the nature of your constituents and the ways you collect data directly from those constituents, you may find issues with incomplete, incorrect, and duplicated constituent information. Automated merging and elimination of duplicates can lead to problematic results. Manual work reviewing potential duplicate records is time consuming, but essential.

A properly conceived CRM initiative will yield benefits that more than cover the total cost of the system in terms of improved relations with constituents and cost efficiencies realized from labor-saving automation.

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Focusing on constituents and mission

Many non-profits have processes and activities with certain types of constituents that are analogous to those in the marketing and sales areas of for-profit business. Two metaphors that are common in the for-profit arena have crossover value for non-profits. The first one is a sales funnel, with a larger number of unqualified prospects needing to enter at the top, in order to have a smaller number of sales fallout at the bottom. The second one is the notion of a ladder of engagement, with contacts being classified according to how many steps they have taken, such as revealing more information about themselves, or increasing involvement on the path toward becoming a client, donor, or volunteer.

In both these metaphors, the overarching goal is to increase commitment and involvement. You want the casual newsletter recipient to eventually become a donor, the first-time event attendee to eventually become a member. Pushing deeper, or rather climbing higher in the analogy, you eventually would love for the constituent to become so committed and engaged in the organization that they lead a committee, sit on the board, or spearhead a new initiative.

These two analogies provide ways to think through this process. For example, it's a good idea to think carefully about the value proposition, that is, the benefits realized, for each step up the ladder of engagement, both for the constituent and the organization. By analyzing metrics such as the number of contacts at each step on the ladder (or level in the funnel), you can identify possible stumbling blocks that could impede that deeper engagement. Do you find that you have no trouble recruiting subscribers and online activists, but can't convert them into online organizers or donors? Perhaps more incentives are needed, or maybe the signup buttons need to be more prominent. Do you have success with online organizer signups, but find they are doing much to fulfill that role? Perhaps the recruitment forms for organizers are too complicated, entering e-mail contacts manually is too much of a burden, or maybe the canned recruitment text the system provides them to send to people needs to be made more compelling.

From an organizational perspective, the investment in each step needs to be commensurate with the expected return. Are you investing heavily in white papers that no one reads? Maybe you should repurpose the content of each one after it has been written into a series of newsletter articles, and even Facebook posts and tweets. If they are seen as highly valuable, but only to significantly interested parties, perhaps you can sell them to interested organizations or organize panel discussion events around their publication. Are you putting a lot of effort into fundraising event organization without much in the way of monetary return? Perhaps you need to shift to direct-ask fundraising, or reduce the cost of food and entertainment at your events by shifting from dinners to after-work wine-and-cheese parties.

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Ideally, business processes are designed so that whenever the organization or one of its constituents is likely to initiate an interaction, the interaction is likely to be of value to both the parties. For example, the newsletters should be edited to provide useful and interesting information for their target audience within the constraints of available resources. By providing this information, the organization comes to be trusted in various ways associated with its mission, for example, spending wisely on deserving initiatives. This hopefully leads a large enough proportion of subscribers to deeper involvement with the organization, for example, attending one of its events or donating to one of its projects or programs. In return, the constituent benefits from the content of the event, and from feeling that they have helped support a worthy initiative.

In many cases, constituent interests will not be aligned so neatly, but that should remain the ideal. For example, permission-based marketing tries to ensure that people do not receive e-mails, phone calls, or letters that they do not want. While unscrupulous marketers may spam and not respect do-not-call requests and lists, those that follow the best practices will find that there are efficiency gains: eliminating contacts from lists which are likely to be poor prospects increases the relative yield and lowers the marginal costs.

Warning

Be very careful when deliberately designing processes that make it hard for constituents to do something they want to do, but the organization doesn't want them to do. The processes which are designed to make it difficult for a constituent to get something from an organization (usually expensive, like staff time) need to make sense, given your business model. Voice-mail hell, and the damage it does to an organization's brand and its ability to deliver to its constituents and partners in collaboration, is an example of a misguided or a poorly-executed effort to reduce the cost of providing information. In contrast, a purely online service, with online forums and contact forms that does not purport to offer phone support may better meet constituent expectations while providing "lower" service levels. If your organization is devoting large amounts of resources to activities that do not significantly advance its core mission, consider ways to leverage that activity to better achieve your mission, re-engineering it to require fewer resources, or even eliminating it. Rationing a service by making it hard to access is not the first alternative to consider, but one of the last.

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Are you frustrating people by setting up false expectations? It is better that people know it will take a few days for the organization to respond to an online query before they start filling it out, since they might choose to work harder at doing a search of your site for the answer. Work to anticipate constituent questions and needs. For example, you could set up auto-responders for your "Contact Us" form to send out frequently asked question sheets for the main areas of interest. This serves the dual purpose of collecting e-mails for further educational outreach efforts (permission based, of course!) while providing contacts with information likely to be of use.

For these kinds of strategies to work well – lowering costs and improving outcomes for both constituent and organization through automation – it is necessary to know your constituents very well.

As part of your planning you should analyze the types of constituents interacting with your organization, the ways they interact with it, and how well those interactions serve their needs. Conversations (on Facebook, in forums, or in person), surveys with open-ended text responses, or more structured focus groups with constituents or prospective constituents can suggest ways of segmenting constituents and useful places to focus on introducing innovations and reducing irritants. More quantitative and thinner feedback can be acquired via surveys with multiple-choice responses, more informally via Twitter, or by simply asking for a show of hands at an event. As the communication channel(s) you use will affect who receives your query as well as their likelihood of responding, you should consider which methods are appropriate, given the characteristics of your current constituent segments, as well as the ones you would like to develop.

As social media becomes more mainstream and more people become active participants in causes and organizations they care about, you will find that your organization has more opportunities to harness your constituents' willingness to criticize, suggest, and collaborate. CiviCRM is particularly well-suited to the transactional side of your CRM initiative, including not only website and e-mail interactions, but also tracking meetings, phone, and even direct mail interactions. However, your overall CRM strategy needs to extend to social media and non-transactional interactions in forums and in person. Just as many for-profit companies have found that their results and brands can be strengthened by warm smiles, engaging manners, and a customer service orientation, your civic sector organization will realize benefits to incorporating these elements into your CRM strategy.

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Rethinking organizational processes

We've already underlined the centrality of orienting analysis and discussion of business processes towards accomplishing the mission of your organization. We've also emphasized on putting the constituent at the centre of thinking about business processes. Throughout, we've tried to communicate the benefits of brainstorming new ways to do the same things and reaching outside the box to consider new ideas. We've also touched on the important but painful topic of ceasing to do some of the things that have always been done. Resistance to change is strongest when existing processes are removed and the least when new ones merely supplement the old.

There isn't space in this book to adequately cover all of the issues involved in organizational design and business process re-engineering. We'd like to just touch on a few topics at the process and content levels. First, the cost of organizational change means that there needs to be significant benefits before deciding to proceed. In any reorganization, there will be disruption as people worry about what the change will mean to them, as teams work through all the details, and as people are reassigned to learn new responsibilities.

Second, ensure you set the objectives—responsiveness, cost efficiency, meeting new needs, and so on—and the criteria for evaluating the organizational change before evaluating the alternatives and selecting a solution. There will always be winners and losers in terms of budgets and desirable assignments. These will affect the perceptions and behavior of participants in the process, even among those with the best of intentions.

Aim to design the organization so that the business units can be responsible for delivering sizable chunks of the CRM strategy and be accountable for the metrics under their control. Every organizational design has its pros as well as cons. Problems often arise when there isn't a good alignment between functional units that cross organizational unit boundaries. The processes here need particular attention. Mismatched or inappropriate metrics on either side of the boundary may result in unnecessary friction in the prospect funnel, with constituents falling off the ladder of engagement due to poor experiences.

For example, every additional field and every additional required field on a sign-up form reduces the number of users who will complete it. Tensions may develop if one unit designs a signup form with only name and e-mail fields in order to optimize the number of signups. This wouldn't provide sufficient information to the staff responsible for mapping the contacts to cities or regions, or eliminating duplicates in the database. Inter-organizational tension along these lines is common; creating a clear system for addressing competing interests is unfortunately, less common.

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The second content-related issue meriting attention is the need for changes in roles, training, compensation, and so on as part of the transition. Specifically, there may be some new online organizing as well as CRM administration responsibilities that require skill sets not currently found in the organization. The ability to administer various aspects of CiviCRM is not so different than what is required for other information management systems. However, online organizing for fundraising, events, membership, volunteer recruitment, or just broadcast communications like blast e-mails is different from the more traditional forms of these activities. Social media outreach, if a part of your CRM strategy, has very specific needs for effective and timely decision making, as well as skill in projecting both personal tone and organizational themes. Your organizational plan should include not only initial training, but also ongoing training to reinforce the skills after they have been used.

After your plan is in place, you will need to pay attention to implementing the more organizational side of CRM strategy. We will not be discussing that in detail, but some important points include the need to communicate the plan and intentions behind it clearly and repeatedly. Discussion and response to difficult questions will be required, including incorporation of valuable suggestions into the plan.

While trying to make your constituents the focal point of your CRM strategy, we've deliberately discussed the technology that CiviCRM provides, but only indirectly. While it is true that technology solutions should generally follow rather than lead, it is also true that organizational maturity and resource constraints may mean that your organization will best benefit from using the processes that are well supported by CiviCRM.

In many areas, CiviCRM provides great flexibility in how it can be used. It supports a wide range of business processes and the challenge is more in simplifying and standardizing how it will be used, rather than in devising new ways to customize it. CiviCRM processes are based on requirements from leading civic sector organizations and usually are the result of extensive community consultation. That's not to say there is no room for improvement or that your organizational needs will not require alternate process structures. However, the time-tested effectiveness of CiviCRM's workflows will warrant consideration as you consider your own organizational processes.

If you find that you have a business process that does not seem well-supported by CiviCRM after reviewing CiviCRM documentation, it is usually best to post a question into an appropriate CiviCRM forum at `http://forum.civicrm.org/`. You may find you just missed something obvious, or that there is a different but better way to accomplish your objective. Alternatively, you may find yourself advised to adopt a work-around or to help in developing new features, if you have available resources.

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Determining your needs

Depending on your process—Agile, or more traditional—you will determine your needs in a less or more formal way. Whatever your process, some approaches are always appropriate.

First of all, it's useful to review the functionality, data structures, and data in your existing systems. Functionality is the easiest to discuss. It provides a sense of the sets of fields—custom data and profiles in CiviCRM's terminology—that may be needed in the new system. When analyzing existing systems, don't be limited to your primary contact database alone. For example, if you use paper sign-up sheets at events or have other paper, e-mail, or web-based data collection forms that are not part of your primary system, be sure to include them in the discovery analysis. With data structures, you'll be able to start mapping out how to migrate data from the existing to the new system. As part of this, you'll be able to identify the custom fields that may be needed, and others that are no longer needed. Enduring information such as constituent interests is worth keeping, while transient information such as their food preferences at an event is less useful.

Resist the urge to just dump everything into the new system thinking that it will be sorted out later. Clutter appears on every system over time, bogging down the system, its interface and its users. Now is the time to pare back unnecessary complications, making the system easier to use and easier to train people to use. It will also help to reduce the scope of the data migration effort, which is often a costly part of a CRM initiative.

Looking at the data will often provide a sense of the scope required in the cleanup effort. You'll need to do some cleanup just to get the data into the new system (for example, dates have to all be in the same format), and removing garbage in your system while you're at it is usually a good idea. You'll find when you are looking at the data and deciding how to clean it up, that it can be useful to have some standards in place. For example, how addresses are entered, whether honorifics like Ms. or Mrs. are used, and standardizing values in some free form fields so the data can be more easily retrieved and entered from a select widget. To reduce the scope of work, it's best to start by deciding what tables and records can be thrown away.

Interviewing users at the data entry, operational reporting, and executive levels gives a useful and diverse insight into the most important data and process needs. You'll benefit from knowing the strategy in the Executive Director's head, the important and unnecessary elements in reports, and the workarounds regarding use and data entry currently employed by front-line staff. When people experienced with CiviCRM do these interviews, there can also be good tradeoffs negotiated, such as balancing what is easy or hard to implement against its relative importance to users.

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Using the existing system as a reference helps to ground solicitation of other needs. We like to ask users about the important new things the new system should do, what they would like to be included in the new system, and what is really problematic and irritating about the old system. Some "nice to have" features can be included with little effort in CiviCRM. Identifying "pain points" in using the current system provides valuable information on how the new system will be evaluated.

To get organizational buy-in for the CRM initiative and create project momentum, plan to provide short-term deliverables. This could include wire frames, screenshots, and flow diagrams that demonstrate how the functionality discussed in the discovery and specification phase will (roughly) translate to forms, pages, and workflows. Important new functionality, nice-to-have features, and eliminated pain points are all fertile quick-win areas where you can demonstrate a commitment to improving user experience.

Asking everyone for feedback on possible implementation timelines is also useful – though be cautious about inadvertently making implied time-based commitments without first gaining a complete picture of the project scope. Reporting deadlines to funders, having functionality in place for certain events, and knowing crunch periods when it would be problematic to run old and new systems in parallel are all needs that should be reflected in your plans.

Functional requirements

In this section, we're going to delve more deeply into the functional areas supported by CiviCRM. We'll be reviewing the kinds of questions to ask, often of a more technical nature, that will help in planning your implementation.

Contact record management

CiviCRM has three basic types of contacts: Individuals, Households, and Organizations. The fields and kinds of relationships that can be created may vary by the type of contact. For example, individuals have first and last names, current employer and job title, while organizations have an organization name, a legal name, and current employees. CiviCRM's rich model for storing address, phone, and e-mail information is shared by all three types of contacts.

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Contact subtypes

In some cases, it is possible to identify unique constituent subtypes that do not overlap with other types. Contact subtypes in CiviCRM extend the three basic contact types, allowing you to further segment your constituent records. A contact may only be assigned a single type/subtype, so these must be constructed such that there is no ambiguity or possible crossover between types. For example, students at a primary school are never also teachers, though at a university it is possible for an instructor to also be a student. The former could warrant construction of two subtypes, while the latter example would not. Try to identify such subtypes early in your process, as it will help structure relationships and keep your data organized. Special relationship types can be set up that only allow a contact subtype at one or both ends of a relationship, like Teacher and Student subtypes being the only ones allowed in a "teaches/is taught by" relationship. Custom data fields may also be created that apply to a single or multiple subtypes, such as the classroom of a primary student. These fine-grained approaches to data fields and relationship types help reduce clutter (the field and relationship types are not visible unless they apply to the contact type) and help improve data consistency (staff are not inclined to record information that doesn't apply for a certain contact type).

Custom data

After identifying the types of constituents your organization interacts with (for example, granting agencies, staff, clients, volunteer lawyers, and donors at a free poverty law clinic), determine the data to be tracked for each type. At this point, we're primarily interested in identifying the kind of information that the organization tracks for the individual, organization, household, or any subtypes you've constructed. Since this data is attached directly to the contact record, it generally will consist of attributes about the contact, such as their expertise or volunteer interests, rather than their interactions with your organization, like what they did the last two times they came in to volunteer.

Different groups of constituents will often need to have different types of custom fields used to track information about them. For example, whether donors prefer a single annual tax receipt or one per donation, the policy area interests of an organizational contact, and what an individual's volunteer interests are. Before trying to capture these needs either through interviews or examining existing data, it can be helpful to review the material in later chapters on how these fields will be implemented, for example as text or integers, Yes/No checkboxes, single or multi-select fields, and so on.

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e-Newsletters and bulk e-mails

Your organization probably sends or could benefit from sending blast or bulk e-mails, such as newsletters and appeals. CiviCRM is good at sending e-mails to lists and tracking which ones are opened, clicked through, and forwarded. Ask the following questions about your bulk e-mail needs:

- What bulk e-mail lists exist and are planned?
- How are contacts added to the list? Ensure that appropriate authorization is being acquired for every bulk e-mail sent to every e-mail address. Also, make sure there are appropriate mechanisms in terms of prominent website blocks and subscription enticements so that you have enough list growth to feed your contact funnel.
- How many custom templates with graphics are required for each e-mail list? Sometimes different communication products are mailed to the same list with each requiring its own template.
- How big is each list and how often is it mailed? This may affect server sourcing in terms of CPU resources, bandwidth, or perhaps e-mail caps.
- How important are high deliverability rates and white listing? Paid services not included in CiviCRM can be set up to assist in monitoring whether various hosts and domains like AOL, Hotmail, Gmail, or Sympatico are blocking your e-mails. Issues can be resolved either by using tools to assist in making your e-mail content more compliant with their ever-changing anti-spam rules, and/or through discussions with them. Monitoring whether your domain or server gets included on various spammer blacklists and promptly dealing with issues in this area may also be important for your organization.

Fundraising

Will your CiviCRM installation need to accept online payments? If you want to accept online payments for events, memberships, or donations you'll need to set up arrangements with an online payment processor such as PayPal, Google Checkout, or Authorize.net. Some of these require your users to go to pages on a different site. These are generally easier to set up and potentially reduce your risk and liability, though they provide a poorer user experience and will cheapen the feel of your site. CiviCRM also supports fully integrated processing where the user never leaves your site while processing payment. While generally a better experience for the end user, there are additional costs and PCI compliance responsibilities you accept when using these methods.

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Getting donors to set up recurring monthly payments provides a steadier and generally larger donation revenue stream. Not every payment processor supports them. Some processors have discounted packages that exclude that functionality. If recurring support is something you require, be sure to research the processor options available with regard to this feature. You also need to check that the popular payment methods in your area are supported (for example, Amex and MasterCard are not supported by some payment processors).

There are a number of different service charge models employed by different payment processors. You will be able to compare and shop better if you know the average number and amount of transactions you process. You may be able to get a better deal if you consolidate payment processing with a single provider. For example, including a PoS (Point of Sale) terminal already used and potentially dealing with a credit union or bank that handles your checks may result in significant savings.

If you are just moving into electronic payment processing, be clear about your needs for accepting payment at the door of events. You may need a PoS terminal if there is no Internet connectivity.

Development and fundraising staff will be pleased to know that CiviCRM supports pledges of future gifts. When soliciting CRM requirements from staff, make sure to determine how they view their prospect funnel and what their needs are for segmenting contacts into different groups. They will probably have the most sophisticated needs in these areas in your organization, and may have techniques that can be deployed successfully for volunteer recruitment and event marketing.

Larger and older organizations are more likely to have direct mail and telemarketing campaigns. Gather information on the data export and import requirements for their systems and external providers.

Memberships and subscriptions

A membership can be defined as time-defined access to organization benefits. In traditional member-based organizations, a contact demonstrates support for the organization and alliance with the organization through membership, and will generally receive benefits and services as a result of that relationship. However, the CiviCRM membership model can also be used in organizations that sell subscriptions or other service-type offerings where the "member" receives access for a defined period of time.

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Existing membership and subscription forms should be used when developing your statement of requirements. Ask if there are any changes desired in the information collected on the form. These fields, some of which will be custom-made, will make up the profile used on the CiviMember page. They generally list all available types, their costs and benefits, and their terms (who can sign up, how long they last, and so on.). Pay particular attention to benefits that are to be automatically provided, including access to special areas of the website, free newsletters, discounts for events, premiums such as calendars or mugs to be delivered, and so on. Also note when special functionality is available only to certain membership categories, such as a youth newsletter or more communications to Platinum members.

Some membership types may not be available for purchase, such as lifetime members earned through long service. Find out if these exist, and who would need to enter them. Also ask about special cases, such as revocation of memberships, subscription refunds, or new subscriptions.

Events

As you review event management requirements, use signup forms from recent events to reveal the kind of data collected about participants and options required, such as breakout session selections and food preferences. Try to get forms for several events. If events are supposed to be the "same", are there variations in the information collected on the form? Are they at different locations or times? Event templates can create similar events, but aren't worthwhile if there are too many variations.

More generally, are some events paid, and if so, can people pay at the door, by check, or online? Are ticket prices for different events the same? Complex price systems that are used repeatedly can be set up as easy to reuse price sets.

Many logistical requirements with an impact on CiviEvent won't be found on signup forms. For example, how speakers at the event are registered and whether provisions are required to give special guests free passes. What are the procedures to be followed at the door? Do people have to have a printed receipt or a mailed ticket in order to get it, or just be on a list of registrants? Are nametags provided?

Are blast e-mails used to invite registrations? Do your registrants often come to more than one event? If so, do you need to pre-populate the registration form used as a landing page for people's click-throughs with their name and other data?

Do you need to provide a way for registrants to contact each other before, during or after the event? Is it important to protect their e-mails while providing this access? Should only names and organizations be shared? Is it okay if non-participants see the personal information being shared among participants?

Other more complex requirements may include setting up collaboration spaces in

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Drupal or Joomla! for registrants to an event.

Grant management

Does your organization provide grants or disbursements to individuals or organizations? Examples could be a grant for first and last month's rent to help a homeless person get stable housing, fellowships for artists, or program grants to organizations working in an environmental policy. The CiviGrant component helps organizations like yours by recording when applications are received, the decision to approve or turn down the application, when payments are made, and whether follow-up reports on the grant have been received.

You'll need to know what information is tracked about your grants. The fields in the application form are the best starting place; they are supplemented by internal forms, such as fields to record reviewers' ratings.

Although the CiviGrant component was not designed for tracking your organization's applications for grants, some CiviCRM users have found it can be used for this purpose with only a minor tweaking of field names. If your organization needs to track its grant applications, review the typical fields that are tracked, starting with application closing dates. Some may need to be supported through custom fields. If your needs extend beyond the structures provided in CiviGrant, consider using the CiviCase tools for this purpose.

Activities

CiviCRM uses the term "activity" to indicate any communication that transpires with constituents or other actions related to your interaction with the contact. CiviCRM automatically records a number of activities, including donations received, registrations for events, memberships purchased, and e-mails sent. You can also use it to record interactions such as meetings, phone calls, and e-mails sent from your normal e-mail client. While the full use of activities may add some administrative burden, the benefits are significant as you will be creating a history of interactions with a contact that can be consulted later. Being able to pull up details of a call taken a few months ago by a different staff person can help quickly resolve an issue rather than forcing it to be addressed from scratch.

Are there other kinds of activities you would like to record about your constituents beyond the types preconfigured in the system? For example, will you use Activities to track mail correspondence, or speeches given by legislators on topics of concern to your organization, media stories published by particular journalists or outlets, or create some integration with Twitter to record tweets including hash tags of interest?

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Determine which activities and custom activities are to be tracked, and also the custom fields needed to record things such as a hardcopy correspondence file number, URLs to a speech, or fields recording story details.

Case management

CiviCRM activities record single specific actions or interactions such as a meeting, phone call or e-mail. Cases pull together multiple activities dealing with the same issue or concern, and allow them to be managed as a unit. Cases are very useful when it takes multiple steps over different days or months, perhaps involving multiple people, to resolve the problem or finish the work.

Many organizations need to manage cases of clients or constituents. These cases may involve requests for a legislator to attend a speaking engagement, assisting a homeless constituent to find housing, or providing a client with treatment referrals of various sorts (mental health, addiction recovery, emergency income assistance, job placement, and so on).

The requirements for a case management system are much more complex than just supporting the activities involved the cases. You'll want to determine:

- The different types of cases your organization handles
- The kinds of custom activities each type requires besides standard ones like opening cases and changing their status
- The workflows for different case types in terms of various kinds of activities (for example, intake, screening, referral, follow-up, and so on) that may occur at pre-defined or ad hoc times
- What statuses are used to track your cases
- What roles are involved in each kind of case activity
- What custom data is required for different activities
- What resources such as career counseling services available in your area are needed for different case types
- What relationships that clients may have with individuals or organizations external to your organization need to be trackable in the system, such as with their physician, social worker, or parole officer
- What terms such as client names need to be redacted during reporting
- What permissions are granted to individuals in different roles to view and edit information about their own cases or all cases

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Roles and permissions

Roles and permissions, also referred to as access control lists (ACL), determine who gets to do what in your system. They are critical for data integrity, confidentiality, and privacy. Privileges to do things, or permissions, are not granted directly to individual users. Instead, permissions to do things are granted to or revoked from roles (for example, staff or volunteer coordinators), and users are assigned roles

CiviCRM running under Drupal has a rich model for controlling the functionality exposed to users in different roles, as well as read, update, and delete permissions on contacts. These permissions can be configured for sets of fields and sets of contacts. Unfortunately, limitations in the current stable version of Joomla do not support the same level of access control available in Drupal. There are often ways to work around Joomla!'s limitations in this area in order to approximate the power and flexibility available under Drupal. However, if fine-grained permission control is important to your organization you should pay particular attention to this factor when selecting the CMS to use with CiviCRM. Joomla! v1.6 will include improved access control and current expectations are that CiviCRM will integrate support in CiviCRM v4.0.

In order to create appropriate roles, groups of users that have permission to do specific things in CiviCRM need to be identified; for example, you may want to limit the ability to edit financial information to bookkeeping staff, and to view financial information to the other staff. Volunteer organizers may need to do things like add Activities, while education program staff may need the ability to add new events. Remember that individuals can belong to more than one group and will be granted all of the permissions that are available to any of their groups. General guidelines in this area are as follows:

- Give names to roles that capture a user's job function with respect to CiviCRM. For example, name it as "Event coordinators" rather than "Jake and Sandra" or "Can edit event info".
- Don't multiply the number of groups unnecessarily since it makes it harder to administer. For example, use a single "Staff" role rather than all eight titles on your organization chart if everyone is getting the same permissions.
- Use permissions to protect the privacy of personal information according to your privacy policy. Make sure your privacy policy reflects the permissions available to different users. For example, don't give "view" permission on any contact information to general users if your privacy policy says personal information will not be shared.
- Protect your data from being modified by users who might make inadvertent mistakes or malicious deletions and changes.

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CMS integration

Integration between CiviCRM and Drupal or Joomla! involves people and content.

Not all contacts in CiviCRM need to have user accounts in the CMS used to power your website. For example, your CRM may include all voters in a jurisdiction and your website may not provide extra functionality requiring logins except to the site administrators. In many cases, however, actions in CiviCRM such as buying a membership will lead to login access and extra permissions in your CMS, such as gaining access to members-only pages of content or discussion forums.

Try to identify groups of contacts that have different permissions. These contacts will need to have user accounts in your CMS and be members of groups that are assigned different roles.

You should anticipate possible content crossover between your CMS and CiviCRM. The most common case is sending newsletters with CiviMail containing teasers of articles in your CMS with links driving people to the full articles on your site. There have been some attempts to standardize this process so that the newsletters can be rendered automatically using a CiviCRM Smarty template or a Drupal Content Template implementation. While manual cutting and pasting is the best approach for the moment, you may want to think about opportunities to take advantage of information in your CRM, such as constituent interests, by linking it with data in your CMS, like content tagged pertaining to their interests.

CRM systems are good at managing contacts and relationships. CMSes are good at managing content. In a few cases the strengths of CMS content management need to be applied to CRM contacts. For example, members of visual arts, music, or video artist organizations may need to have rich media associated with those contacts as well as have all of their dues and grant application transactions tracked. In these cases the CRM contacts will need CMS user accounts and those accounts will have CMS profiles with rich media associated with them.

The growing number of Drupal modules and Joomla extensions that integrate with CiviCRM, particularly those that expose CiviCRM data to the CMS, provide increasing opportunities to develop cost effective custom websites based on contact and relationship data. For example, an activist organization may want to display a mash up of contact information, such as their photos, quotes on a topic, or a map, in which case the information is all coming from the CRM and the functionality driving it is coming from the CMS. In-house or external consultant resources will be able to assist in gathering your custom CRM requirements in these areas.

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Third-party integration

While most of your integration work will be between CiviCRM and your CMS, it's not uncommon to have other third party integration needs as well. We've mentioned that some organizations may need higher-end e-mail services to improve deliverability and avoid the effort involved in dealing with e-mail blacklists.

Another common third party application used with CiviCRM is various forms of single sign-on authentication. These allow a single username and password to be used on a variety of systems and sometimes allow logging in on one of the systems to result in the user becoming logged in to all of them. These may be large legacy systems in some organizations or small online e-learning systems like Moodle in others. Identifying which applications need single sign-on will drive the selection of a single sign-on implementation such as LDAP.

Significant complexities result when more than one system makes CRUD (create, read, update, delete) operations on the same dataset. Two-way data integration of contact information and various secondary transaction datasets is not to be undertaken lightly. Standardized APIs and plugins are becoming more readily available for both Drupal and Joomla!, though you should fully define your specifications and determine cost as this level of integration can quickly become costly.

Server sourcing

CiviCRM is a heavy application in terms of CPU and RAM resources. It is fairly light in terms of disk space and bandwidth requirements in comparison to media heavy sites.

You should expect need to upgrade the memory on the server currently hosting your Drupal or Joomla! site when you add CiviCRM. The web server processes, typically Apache, will be larger as they are used to execute CiviCRM's codebase. As the processes take longer to run and complete, more processes are needed to support the same number of sessions.

A small CiviCRM implementation with a moderate number of users should be able to run in a single virtual private server. This includes serving the pages via Apache, running the database, and processing inbound and outbound mail. Shared hosting accounts are not adequate, though some implementations with less than 500 contacts have managed with them.

If you have significant volumes of e-mails, consider off-loading that functionality to another service such as the outbound CiviSMTP service from UAS or an EMS provider like SendGrid. This can make a big difference in the server load.

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Increases in load from more concurrent users can be handled by shifting to a dedicated server, moving the database instance to a different server, changing the frontend to a cluster of web servers, and upgrading the database server. Adding a fail-over slave database server can assist in improving performance as well, as reads can be made against the slave while writes are sent to the master. Scenarios with heavy report processing are likely to benefit significantly from this topology.

As the number of contacts in the database goes from thousands to hundreds of thousands, CiviCRM's MySQL database instance will require significantly greater resources in terms of CPU and RAM. Moving it to a different VPS or server than the web server is advisable.

Cloud computing technologies and techniques are becoming more pervasive in commercial web hosting and in-house hosting. It's becoming quite easy and common to run CiviCRM on a virtual machine image that can be reconfigured easily and quickly to reboot within minutes with a different number of processor cores and different memory allocations. This can be particularly cost effective when your organization faces large changes in usage, for example, during an election campaign.

The **Payment Card Industry Data Security Standard** also recognizes that moving mail services and database services off a web server is a good idea for security as well as performance.

Implementation plan

After conducting interviews and soliciting input through surveys and other means with key users and stakeholders you should be in a good position to develop a phased implementation plan that schedules the delivery of chunks of functionality over the life of the CRM initiative. Depending on your process and methodology, you might start working on some easy low-hanging fruit with users in one area while the scope and requirements in other areas remain vaguely stated in a one-page plan. Alternatively, you might choose to have a multi-year plan with significant specifications for all phases in a set of documents.

In any case, your organization should recognize that its CRM initiative is not just a technology project. For each segment of constituents, the CRM plan should have a strategy targeting the number of constituents involved, the level of their involvement, the quality of their experience in the organization, and a clear sense of how this will help achieve the mission of your organization. Ideally it will specify 10 to 15 metrics that will be used to measure how well the initiative assists in realizing the organization's objectives.

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As part of this process, the organizational structure should be examined and possible organization restructuring plans and processes considered. The engagement strategy for each segment of the constituents will be translated into work processes for Communications, Membership, Events, Fundraising, Volunteer Organizing, Grant Management, and Case Management. Where processes are automated, use cases will ensure that strategic objectives of the organization are kept in focus as user experiences are optimized.

The people side of the project should ensure that staff and volunteers are communicated with effectively in light of your organization's culture. Engagement and involvement mechanisms should be used to address inevitable fear, uncertainty and doubt, and assist with initial and on-going matters of motivation. Where job responsibilities change and people need to begin using new systems like CiviCRM, appropriate initial training and ongoing reinforcement training should be planned. Your goal over time should be to encourage consistent use of the most essential areas of the system, and progressive growth with the more advanced and scenario-specific needs.

The technology side of the project will include more or less formal plans covering:

- Installation
- Configuration
- Customization
- Data migration
- Graphic design
- Theming
- Testing
- Deployment
- Verification of the new system

The deployment plans may involve a phased rollout of new features or a big bang introduction to the new way of doing things. Particularly in the case of financial systems, consideration should be given to operating the old and new systems in parallel for a reporting period or two in order to make sure that the new system is operating correctly, and to determine the ways in which old and new reports differ in terms of the data they present.

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Summary

This chapter outlines how to create a successful CiviCRM implementation project.

It lists common barriers to the success of CRM initiatives that arise because of either people issues in an organization or technical issues getting systems and tools supporting disparate business functions that provide integrated functionality.

We advocate a pragmatic approach to implementing a CRM strategy for your organization. We encourage the adoption of a change in approach and associated processes and methodologies that works for your organization: wide ranges in the level of structure, formality, and planning all work in different organizations. Your implementation plan should include a schedule and a realistic budget including on-going costs.

Choosing the right people for your team is crucial to the success of the endeavor. Ideally you'll include an executive or board sponsor, one or more key functional managers, one or more key staff users, and appropriate technical expertise for your team, all with good personal effectiveness and an ability to get along.

Start your planning by segmenting your constituents into groups, listing the important interactions each group has with your organization, and identifying actionable metrics that measure those interactions. Create an inventory of existing systems involved in these interactions and their data. Develop a shared CRM vision for the organization, and then articulate how it would be translated into the user experiences at various levels in the funnel(s) of prospects for high-value constituents.

For requirements, iterate between a broad and tight focus. Use existing systems and paper forms to solicit feedback in interviews from executive, management, and staff perspectives. User surveys also provide good quantitative results.

In each functional area, list the known pain points, important new functionality, deadwood or cruft to be eliminated, and possible quick wins. Recurrent and important functional requirements include custom fields, organizationally specific groups for mailing lists and access control, fields required for forms in different processes, user permissions, and custom activities and workflows. Take time to brainstorm how to be more efficient in internal processes and accomplish your mission in new ways.

In our next chapter, we'll start getting our hands dirty with technical matters on installation and maintenance of CiviCRM.

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3

Installation, Configuration, and Maintenance

By now you should have a good understanding of what CiviCRM and constituent relationship management tools can do for your organization. You also should have taken the time to plan your implementation, including thinking through your existing data sources and mapping out how they will translate to CiviCRM. Don't underestimate the importance of the planning process—while you may be anxious to install CiviCRM and begin working with it, your project will be better positioned for success if you invest more of your time in preliminary planning.

In this chapter, we will:

- Install CiviCRM
- Walk through the initial configuration of the system
- Discuss advanced configuration options you need to be aware of, including access control permissions under Drupal
- Review the upgrade process
- Outline recommended maintenance procedures
- Plan a backup strategy

Since CiviCRM may be implemented in either the Joomla! or Drupal content management systems (CMS), there will be aspects of this chapter that are specific to each environment. We have sought to clearly indicate where the guidance is environment-specific. As you work through this chapter, be sure to take note of the context which relates to your implementation.

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Aspects of this chapter may be more technical as we provide basic troubleshooting steps and address hosting environment considerations; don't be scared off by the technical discussion. For most implementations, the installation and configuration process is quick and painless. It's also worth noting that the installation, configuration, and upgrading of CiviCRM are the most technical aspects involved in using CiviCRM. If needed, you can outsource some or all of this work to professional services such as those listed at `http://civicrm.org/professional` and `http://civicrm.org/moreprofessionals`.

Installing CiviCRM

At this point, we have a handle on what CiviCRM does, we've mapped out our system and planned our implementation; now let's get things up and running!

The following instructions assume you have a working installation of Joomla! or Drupal. If you have not yet set up your CMS environment, you should do so before continuing with this section.

Begin by visiting the CiviCRM website `http://civicrm.org/download`, or going directly to `http://sourceforge.net/projects/civicrm/files/` to select a version of CiviCRM to install. We recommend always using a stable version for production sites. For Joomla! installations and the browser/FTP Drupal method of installing, you need to download the installation package onto your local machine, and then upload it to your server. The advanced command line installation method discussed for Drupal allows you to skip this step by retrieving the package directly to your server.

Be sure to always visit the download site when implementing a new installation of CiviCRM, as the project releases minor revisions on a regular basis and you want to make sure you are working with the most up-to-date (and bug-free) codebase.

There are three installation packages available for CiviCRM, depending on your environment:

- Drupal
- Joomla!
- Joomla!-alt

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Versions 2.0-3.1 of CiviCRM made available a standalone version of CiviCRM which could be run outside of a CMS or be potentially integrated into another CMS. Support for the standalone version was dropped in v3.2. If you are using a content management system other than Joomla!/Drupal or have other reasons for investigating a standalone implementation, consider contacting the core development team to determine the latest status of standalone support. Many implementers who are not using Joomla!/Drupal environments have found it easier to create a Joomla!/Drupal "shell" site for hosting CiviCRM, and then integrate the various frontend pages and forms into their primary website.

The Joomla!-alt package differs from the standard Joomla! package in that it does not include embedded compressed files. If you were to examine the standard Joomla! installation package, you would find that it contains a series of installation files and a large `.zip` package. In contrast, unpacking the -alt version shows all the application files (that is, there is no sub-package inside the main package).

So which one should you use? The standard package was structured this way to improve handling in the Joomla! extension installer; generally speaking, you will want to use that package. If you have any difficulties with installation, try using the alternate package. Specifically, if you receive an error message indicating that PHP is missing the `.zip` functionality, you will need to use the -alt version.

In addition to the three versions listed above, you will also see a language package file (`-l10n`) and MD5 hash files (`MD5SUMS`) that can be used to verify the package integrity.

CiviCRM has strong multi-language support. The language package contains translation files for all the languages supported in the current version of CiviCRM.

Note that some of these translations are not complete and should be reviewed and tested thoroughly before implementing in a live environment. Generally, the strings in public user-facing pages are translated first, with administration strings and less frequently-used functionality lagging.

In some cases you may find you can combine existing language resource files for different regions to extend their coverage. For example, separate translation efforts for Canadian French and French in France were combined into a new Canadian French file that used Canadian terms when there were translations available in both language files. This allowed "State/Province" to be rendered as a "Province" rather than a "Département".

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For more details on CiviCRM's translation and localization efforts, visit:

- Localization Guide: `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviCRM+Localisation`
- Online Translation Tool (Transifex): `http://translations.civicrm.org`
- Localization Forum: `http://forum.civicrm.org/index.php/board,10.0.html`

At the time of writing this book, CiviCRM has translations (which may only be partial) for the following languages:

Afrikaans, Albanian, Bulgarian, Catalan, Chinese (China - simplified), Chinese (Taiwan - traditional), Czech, Danish, Dutch, English (Australia), English (United Kingdom) Estonian, Finnish, French, French (Canadian), German, Greek, Hebrew, Hindi, Hungarian, Indonesian, Italian, Japanese, Khmer, Norwegian, Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian, Slovak, Slovenian, Spanish (Castilian), Spanish (Mexican), Swedish, Telugu, Thai, Turkish, and Vietnamese.

There are additional translation teams for Arabic, Bosnian, Catalan, English (Canadian), Norwegian Bokmål, Persian, Tamil, and Ukrainian. This usually means that a translation was produced for that language in an earlier version, which may provide some useful materials for a new translation. If multi-language support is something you are interested in, consider participating in translations using the preceding tools.

Before proceeding with installation, ensure your hosting environment meets the minimum requirements as outlined in the previous chapter. Though you may have success installing CiviCRM in an environment that does not meet those base technical requirements, you are likely to find that certain functions do not work correctly if those requirements are not met.

Installation in Joomla!

CiviCRM is installed using Joomla!'s extension tool, **Install/Uninstall**, available from the **Extensions** menu in your Joomla! website's administrative interface. However, unlike most Joomla! extensions, you will not be able to install the software using the **Upload Package File** option. Why is that? This is simply because CiviCRM is a very large piece of software—over twice the size of Joomla! itself, and most hosting environments are not configured to accommodate the resources required to upload the package and run the installation script in a single process (as with the **Browse and Install** option). Consequently, we must use alternative tools available through Joomla!.

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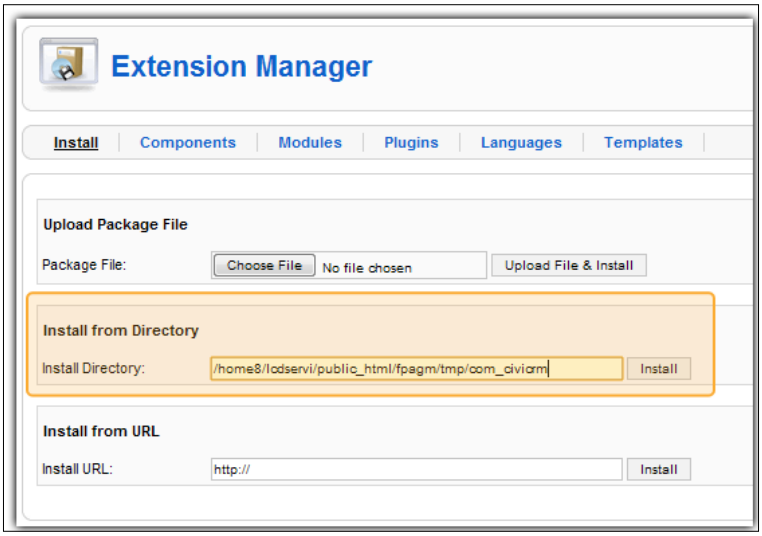
Please follow the installation instructions carefully as they differ from the installation process for many other Joomla! extensions.

Proceed with the following steps to install CiviCRM in Joomla!:

1. Upload the installation package to your website using FTP software. We recommend that you upload the package to `/YOUR_JOOMLA_ROOT/tmp/`. This folder is created by Joomla! and is the most appropriate place to store installation packages.
2. Unpack the installation package. You may do this using the command line or a web-based file browser hosted on your server (such as **cPanel File Manager**). There are various extensions available for Joomla! that let you work with the filesystem from within Joomla!, which may also be helpful. If you have difficulty unpacking the installation package online, you may need to unpack it on your local computer and use FTP software to upload the unpacked set of files to the `/YOUR_JOOMLA_ROOT/tmp/` directory. After uploading and unpacking, you should see a `/com_civicrm/` folder inside the `/YOUR_JOOMLA_ROOT/tmp/` directory.
3. Browse to **Extensions** | **Install/Uninstall** in the Joomla! administrative interface. Using the **Install from Directory** option, enter the full file location of the unpacked `/com_civicrm/` directory. In most cases, Joomla! will pre-fill that field with the proper location of the `/YOUR_JOOMLA_ROOT/tmp/` directory and you will only need to add **com_civicrm**.



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4. After clicking on **Install**, you should be directed to a screen confirming a successful installation. Click on the link provided to enter CiviCRM and confirm that it is installed and working.

If you experience problems installing CiviCRM, review the *Installation troubleshooting* section for a general review of possible server and environment-related issues. With Joomla! installation, the most common problem arises from unfamiliarity with the **Install from Directory** method we just described. Most Joomla! users are used to the more common **Browse and Install** method of installing extensions.

The two critical things to remember are as follows:

- The CiviCRM installation package must be unpacked on the server. You should be referencing a folder location—not the `.zip` file you downloaded from `www.civicrm.org`.
- The folder location must be the full filesystem path—not the path relative to your web directory. For example, it may look something like `/home/user/public_html/tmp/com_civicrm/`. If you received the following error message: **Please enter a package directory**, it is because you are not referencing the correct path to the unpacked installation files.

If you continue to experience problems during installation, visit the CiviCRM forum dedicated to Joomla! installation: `http://forum.civicrm.org/index.php/board,7.0.html`.

Installation in Drupal

CiviCRM uses an automated installer to configure the software for use in Drupal. The following directions address the process of setting up an implementation of CiviCRM within your existing Drupal installation.

Drupal supports using a single codebase to operate multiple websites (see `http://drupal.org/getting-started/6/install/multi-site`). Site-specific data is stored in site-specific directories under `/path_to_docroot/sites/`, with each site's domain name typically used as the name of its subdirectory. This site-specific information includes the database name, unique to each site, and other connection information stored in the `/path_to_docroot/sites/yoursite.org/settings.php` file. CiviCRM supports this multi-site shared codebase and separate databases approach transparently during the installation process. Make sure to create a separate CiviCRM database for each site before starting the installation process.

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Although this multi-site approach is still very popular, there are some countervailing trends in favor of single site installs. There are dependency, complexity, and timing issues when attempting to upgrade multiple sites sharing a codebase in a single directory simultaneously. More importantly, Drush (`http://drupal.org/project/drush`) and Aegir (`http://groups.drupal.org/hostmaster2`) have made it increasingly easier to manage a single codebase for multiple single site installs using multiple copies of the same code files.

The CiviCRM installation procedures in the following sections work if your Drupal site is either a single site or a multiple site configuration, as we just described. Different procedures are required if you want to use advanced techniques for sharing database tables between different Drupal sites in order to provide a single sign-on capability (visit `http://thedrupalblog.com/setting-multi-site-drupal-6-installation-shared-databases-and-single-sign`) or for sharing a database across several CiviCRM sites in order to share contacts and/or administrators between sites (visit `http://wiki.civicrm.org/confluence/display/CRMDOC/Multi+Site+Installation`).

Depending on your skill and comfort level, you can choose to install CiviCRM in one of the following two ways. The first one uses a browser and a client application for FTP. The second one uses SSH, a secure command line shell, and may be faster and more convenient for those with basic Linux skills.

Browser/FTP procedure

Before you begin the installation process, take note of the database settings for your Drupal installation. If you do not know the values, you can find them at `/path_to_docroot/sites/default/settings.php` (the default location).

Locate the `$db_url` variable:

```
$db_url = 'mysqli://dbuser:dbpassword@localhost/drupal_dbname';
```

Here:

- Database server: `localhost`
- Drupal database name: `drupal_dbname`
- Database user name: `dbuser`
- Database user password: `dbpassword`

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Older sites may still be using the `mysql` driver, rather than `mysqli`:

```
$db_url = 'mysql://dbuser:dbpassword@localhost/drupal';
```

If this includes your site, you should definitely consider upgrading to `mysqli`. First introduced to support MySQL 4.1 features, **`mysqli`** is now very stable and well-supported in PHP 5.x, and provides performance improvements over the `mysql` driver. Changing the driver specification from `mysql` to `mysqli` in the `$db_url` is all that is required for Drupal to gain these benefits.

You may now begin the installation process. Follow these steps:

1. If you haven't done so already, download the latest stable CiviCRM installation tarball for Drupal to your local machine from `http://sourceforge.net/projects/civicrm/files/` (using the **Download Now!** button is the best way to ensure you get the right tarball).
2. Upload the CiviCRM installation package from your local machine to the `/path_to_docroot/sites/all/modules/` directory in your Drupal installation. Installing CiviCRM and other modules under this directory will keep the files separate from core Drupal modules and facilitate any future Drupal core upgrades. (If you don't want CiviCRM to be available to other sites running off this codebase, you can create a `modules` subdirectory under your `sites` directory at `/path_to_docroot/sites/default` or `/path_to_docroot/sites/yourdomain.org` and install it there instead.) If necessary, adjust the permissions for the `/path_to_docroot/sites/` directory to provide write access to the account that is running the web server process (and return it to the original permissions when complete). This can normally be done using your FTP or SFTP client applications, or by using the following command:

   ```
   $ cd /path_to_docroot/sites/ ; chmod -R 666 ./*
   ```

3. Unpack the installation package. You should now have the following directory in your site: `/path_to_docroot/sites/all/modules/civicrm/` with other subdirectories contained within it.
4. Create a separate MySQL database for CiviCRM using an appropriate tool like phpMyAdmin or your hosting panel. The installer will create a new database for CiviCRM automatically if you enter a database name in the next step that doesn't already exist on your database server and the database user you enter has permission to create databases. We don't recommend granting that privilege to database accounts that don't need it, such as the ones used by your Drupal site.

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It is considered a good practice to keep Drupal and CiviCRM in separate databases for backup and upgrade purposes. Consider using a naming convention where the domain name is used for the database username, and `_dru` and `_civ` are appended to it to indicate the Drupal and CiviCRM databases. For a staging site for the same domain, you could name the databases `domainname_staging_dru` and `domainname_staging_civ`. The advantage of doing this is that privileges can easily be set at once for all of these databases when creating the database user.

Note that if you plan to use the Drupal Views module to display CiviCRM data within your Drupal pages, and if you are going to use separate database users for Drupal and CiviCRM, you need to ensure that your Drupal database user has `SELECT` permissions for your CiviCRM database. Using the same database user for both Drupal and CiviCRM as described meets this requirement.

5. The next step will be to run the installer, which will confirm that you've downloaded the correct version of CiviCRM, and ensure that your server meets the software requirements. The installer creates the necessary tables in your database and configures the `civicrm.settings.php` file with the required variables. To run the installer, log into Drupal as a user with administrator permissions and point your browser to the following URL: `http://yourdomain.org/sites/all/modules/civicrm/install/index.php`.
6. This opens the CiviCRM installation tool. Complete the form with the database details you noted down earlier for the Drupal database and the ones you created for your CiviCRM database, and then click to re-check the configuration and requirements. If there are any system settings that do not meet the requirements, you will be given a notification and a chance to resolve the issues. Return to this page and re-check until you have all the issues resolved. You may also choose to install sample data (which provides a good head start to understanding the system) and select an alternate language (if you've obtained and uploaded the translation files to the CiviCRM directory).
7. Click on the **Check Requirements and Install CiviCRM** button to proceed with the installation. If the installation script completes successfully, you will receive a green bar and a notification of success. During the installation, CiviCRM configured standard permissions for anonymous and authenticated users to access CiviCRM tools and forms. You will want to review these settings to confirm that they suit your website's needs. We will discuss Drupal roles and permissions as they relate to CiviCRM later in this book.

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Note that during the installation, Drupal creates a `files` directory underneath the `/path_to_docroot/sites/` subdirectory for your site and makes it writeable. CiviCRM will create folders for temporary files under this directory by default, for example, `/path_to_docroot/sites/yoursite.org/files/civicrm`.

The installation script should enable the CiviCRM module automatically and display a link in your menu for CiviCRM. Click on the CiviCRM menu item to enter and confirm a successful installation.

If you don't see the CiviCRM link on your primary menu when logged in as an administrator, browse to **Administer** | **Site building** | **Modules** to confirm that the CiviCRM module is enabled. If the module is enabled and you still can't see the CiviCRM link, visit the CiviCRM forum dedicated to installing it under Drupal in order to troubleshoot it further: `http://forum.civicrm.org/index.php/board,6.0.html`.

Drush procedure

Drush (Drupal shell) is a Linux shell utility which can be used to perform actions on your Drupal installation, including multi-site management. During 2010, efforts were made to provide CiviCRM support through Drush. Before using it, you must install Drush and the CiviCRM support file (detailed below). Using Drush requires PHP 5.2+. The Drush CiviCRM commands as of CiviCRM version 3.2 are as follows:

Command	Description
`civicrm-cache-clear`	Clear the entire CiviCRM database and smarty caches.
`civicrm-install`	Install a new instance of CiviCRM.
`civicrm-rest`	Rest interface for accessing CiviCRM APIs. It can return `xml` or `json`-formatted data.
`civicrm-restore`	Restore the CiviCRM codebase and database back from the specified backup directory.
`civicrm-sql-cli`	Open an SQL command-line interface using CiviCRM's credentials.
`civicrm-sql-conf`	Print CiviCRM database connection details.
`civicrm-sql-connect`	A string for connecting to the CiviCRM DB.
`civicrm-sql-dump`	Export the CiviCRM DB as SQL using `mysqldump`.
`civicrm-sql-query`	Execute a query against the CiviCRM database.
`civicrm-update-cfg`	Update `config_backend` to correct `config` settings, especially when the CiviCRM site has been cloned/migrated.

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Command	Description
`civicrm-upgrade`	Replace CiviCRM codebase with the new specified `tarfile` and upgrade the database by executing the CiviCRM upgrade process: `civicrm/upgrade?reset=1`.
`civicrm-upgrade-db`	Execute the `civicrm/upgrade?reset=1` process from the command line.

In order to install Drush if you haven't already, proceed as follows:

1. Download the current version of Drush to your home directory on your server.
2. The simplest way for beginners is to download to your local machine by clicking on the download link for the recommended release at `http://drupal.org/project/drush`, and then uploading to your home directory on your server using SCP, SFTP, or FTP.
3. An easier way for more advanced users is to note the URL for the download by hovering over the download link for the recommended release at `http://drupal.org/project/drush`, and then use that URL in the following SSH command:

   ```
   $ cd ~; wget http://ftp.drupal.org/files/projects/drush-6.x-3.3.tar.gz
   ```

4. Untar the file:

   ```
   $ tar -xzf drush-6.x-3.3.tar.gz
   ```

5. Rename the `drush` directory:

   ```
   $ mv drush .drush
   ```

6. Make the `drush` file in the extracted `drush` directory executable:

   ```
   $ chmod u+x ~/.drush/drush
   ```

7. Ensure that the directory is in your path.
8. Examine the output of the following command to ensure that `/usr/local/bin` or some other usable directory is in your `$PATH`:

   ```
   $ set
   ```

9. Create a symbolic link pointing to the `drush` executable from somewhere in your path, such as `/usr/local/bin`:

   ```
   $ ln -s ~/.drush/drush /usr/local/bin/drush
   ```


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10. Check if Drush is working:
    - Move to the document root of your site:
      ```
      $ cd /path_to_docroot/
      ```
    - Execute Drush:
      ```
      $ drush -l http://mysite.org help
      ```

Now, install Drush support for CiviCRM as follows:

1. Find the latest version of the Drush /CiviCRM `include` file in CiviCRM's subversion repository: in your browser, navigate to `http://svn.civicrm.org/tools/branches/` and note the most recent version, such as **v3.2**.
2. In your command shell, execute the following command after replacing v3.2 in the command with the most recent version that you just noted:
   ```
   $ cd ~/.drush/includes
   $ wget http://svn.civicrm.org/tools/branches/v3.2/drupal/drush/
   civicrm.drush.inc
   ```
   Now that Drush is installed with CiviCRM support, it is easy to install CiviCRM.
3. If it doesn't already exist, create a directory for your Drupal modules either at `/path_to_docroot/sites/all/modules` (recommended) or in the directory for this site (for example, `/path_to_docroot/sites/yourdomain.org/modules`) to prevent CiviCRM from being available to other sites running off this codebase:
   ```
   $ mkdir -p /path_to_docroot/sites/all/modules
   ```
4. Locate the tarball to be installed by navigating in your browser to `http://sourceforge.net/projects/civicrm/files/` and choosing the correct version to use in the following command in place of `3.2.0` (note that the version number appears twice in the URL):
   ```
   $ wget -O /path_to_docroot/sites/all/modules/civicrm.tar.
   gz http://sourceforge.net/projects/civicrm/files/civicrm-
   stable/3.2.0/civicrm-3.2.0-drupal.tar.gz/download
   ```
5. Now, install CiviCRM with Drush using the following command, substituting appropriate values for `yourDbUser`, `localhost`, `yourCivicrmDbName`, and `3.2.0`:
   ```
   $ drush civicrm-install --dbuser=yourDbUser --dbpass=yourDbPassword
   --dbhost=localhost --dbname=yourCivicrmDbName --tarfile=sites/
   all/modules/civicrm-3.2.0-drupal.tar.gz --destination=sites/all/
   modules
   ```


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6. In a browser, log in into your site as a Drupal administrator.
7. Browse to **Administer** | **Site building** | **Modules** to confirm that the CiviCRM module is enabled.
8. You should now have a link in your menu for CiviCRM. Click on the CiviCRM menu item to enter and confirm a successful installation.

If you don't see the CiviCRM link on your primary menu when the CiviCRM module is enabled, visit the CiviCRM forum dedicated to installing it under Drupal: `http://forum.civicrm.org/index.php/board,6.0.html`.

Installation troubleshooting

A majority of installation problems are the result of a failure to meet the hosting server requirements, insufficient resources in your hosting environment, or misunderstanding of the installation steps detailed above. Let's review each of these.

As noted earlier, CiviCRM does have specific requirements for the hosting environment, which includes the versions of Apache/MySQL/PHP used, InnoDB support for MySQL, and certain PHP extensions required for various functions. In some cases, CiviCRM will render an error along with guidance when you attempt to install the software without meeting the base requirements. However, at times you may be able to install CiviCRM without the presence of descriptive errors and may not notice issues until later. Be sure to review and confirm compliance with the server requirements prior to installation.

If you are unsure what versions of Apache/MySQL/PHP your hosting environment is running, create a file named `phpinfo.php` in your document root directory containing only `<?php phpinfo(); ?>`. Ensure that it is readable by your web server, and then navigate to `http://yoursite.org/phpinfo.php`. In Joomla!, this information can be reviewed through the **Help** | **System Info** | **PHP Information** page without the need for a separate `phpinfo` file. After creating a `phpinfo.php` file and reviewing your system details, delete the file from your web server as it presents a certain security risk by exposing system details.

The second common cause for installation problems is inadequate hosting resources. CiviCRM is a fairly resource-intensive application and your ability to install and work within the system will be directly related to the resources available on your web host. For this reason, we strongly recommend running your CiviCRM installation on a virtual private server or dedicated hosting. While it may be possible to run CiviCRM on a shared hosting environment, it will be more susceptible to resource-related problems.

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Insufficient resources often result in the dreaded white screen of death. If you have carefully followed the installation steps outlined above, and after completing the installation have received a white screen, it's likely you lacked sufficient resources to complete the installation script.

Insufficient memory may manifest in a number of other ways during operation as well, such as explicit errors about insufficient memory and occasionally odd PHP error messages while doing memory-intensive operations. Unless you have tuned your Apache or other web server settings after increasing your PHP memory settings, insufficient CPU resources often manifest as insufficient memory. If Apache has been tuned to ensure that it does not spawn too many processes, insufficient CPU resources will result in users seeing timeouts on their page requests. Insufficient disk space manifests first as a slowdown in server responsiveness before the users start seeing errors about temporary files not being saved correctly.

The solution? Really the best solution is to look at moving your site to a new hosting environment better suited to CiviCRM. While it may be possible to install CiviCRM through a manual process, resource issues during installation are a good indication that you will experience other resource-related problems when actually working within CiviCRM.

The CiviCRM website maintains a community-contributed list of hosting providers and comments about how CiviCRM runs in their environment. If you've not yet chosen a hosting solution, review this page to help with your selection process: `http://wiki.civicrm.org/confluence/display/CRM/Hosting+provider+information`. Note that this list is contributed and maintained by the community, and does not imply endorsement by the core development team.

Sometimes the insufficient resources are due to PHP settings and not the actual resources available on the hosting space. We recommend the following minimum settings which can be altered through your `.htaccess` or `php.ini` file, depending on your server configuration. Please refer to your hosting documentation for details on the preferred method for altering these settings, and to confirm that they will permit such modifications. Also note that these recommendations represent a standard minimum level—the size of your database, number of concurrent users, and other load factors may require higher values. Resource-intensive activities such as large data imports may also require higher values for temporary periods of time.

```
.htaccess:
php_value memory_limit 96M
php_value register_globals off
```


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```
php_value max_execution_time 600
```

```
php.ini:
memory_limit = 96M
register_globals = off
max_execution_time = 600
```

The third common problem is simply a misunderstanding of the installation process. Take time to review the installation steps outlined above for your respective CMS environment and ensure you have completed each step accurately. Search the online forums if your installation problems persist.

Configuring CiviCRM

After successfully installing CiviCRM, your next step will be an initial configuration of the system. We say "an initial configuration" because you will find yourself returning to configure different elements of the system throughout your implementation process. However, there are basic configurations that should be done at the outset.

All of your system configuration will be done through the **Administer** menu item. The first submenu item, **Administration Console**, provides a full listing of all configuration options. In addition, the software has a **Configuration Checklist** that is helpful in walking through the initial settings. The checklist was provided as a link after your successful installation, and can also be found in the **Configuration** section of the **Administration Console**.

Before you walk through the configuration checklist, you should enable the components you want to use at **Administer** | **Configure** | **Global Settings** | **Enable CiviCRM Components**.

CiviCRM is fairly modularized. By that, we mean you can turn on and off the main functionality sections (what CiviCRM calls components) in the system. This is particularly helpful for keeping a simplified, streamlined interface that only presents tools you are actually using. For example, if your organization doesn't host any events, then you will not need the CiviEvent component and can disable it using this page. All of the menu entries for disabled components will disappear from the interface.

You can return and re-enable a component at any point in time. During this initial configuration, decide which components you know you are going to use and configure, and make sure they are enabled.

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Note that CiviContribute is less "independent" than the other components. CiviEvent, CiviMember, and CiviPledge all make use of the CiviContribute functionality. For example, if someone registers for an event with fees, the payment transaction is logged in CiviContribute while the registration is logged in CiviEvent. If you plan to collect any type of payment in your site (events, donations, or membership fees), be sure to enable CiviContribute.

Let's proceed by clicking on **Administer** | **Configure** | **Configuration Checklist**. The list is organized into sections, which we will review in the order presented as we configure your system. After visiting a link it will turn green in order to help you track your progress. In each section, make use of the inline help or links to online help for details about the settings and options. Our review will cover the primary settings you must be aware of.

Site Configuration

Site Configuration includes two sections: **Localization** and **Domain Information**.

Localization handles your language, currency, default import, and internationalization settings.

In the countries and state/province sections within **Localization**, you choose which countries and their corresponding states/provinces are available for addresses in your system. In most cases you will select the same set of values for each field. If you have a site with multiple countries enabled, be sure to include the countries field in any forms (profiles) you create and place it before the state/province field. The state/province field will generate a list of available values based on the user's selection of a country, which means that you want to encourage people to select the country value first. Failure to do this will result in a very long list of states/provinces for all the enabled countries which will be cumbersome to work with.

CiviCRM has substantial multi-language capabilities, including the ability to have multiple languages supported within the same site (allowing the user to select their preferred translation). You must install an appropriate language file while installing CiviCRM if you want to use a language other than US English as your default. Refer to the discussion in the *Installing CiviCRM* section for details about the CiviCRM translation server.

Note that if you choose to make your site multi-lingual (where more than one language is available to users), it will require sufficient database user permissions and will make modifications to your database that cannot be undone. If you are unsure if you want to use this capability, consider testing the functionality on one of the CiviCRM demo sites before implementing on your own site.

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Domain Information is used to configure the name of your organization, the **FROM Email Address**, mailing address, and other contact details. The settings here are important as they will be used as the default FROM address for system-generated and CiviMail e-mails sent from CiviCRM. Note that the e-mail address used needs to be a valid user on your hosting server in order for CiviCRM to send e-mails properly (this requirement will depend on your hosting environment configuration).

If you are planning to use CiviMail for broadcast e-mail capabilities from your site, be sure to complete the domain address fields so that it can be included in bulk e-mails. This is a good practice for any legitimate broadcast e-mailer, and is required by anti-spam legislation in some jurisdictions (for example, the American CAN-SPAM Act), and CiviMail itself.

Viewing and Editing Contacts

The next configuration section, **Viewing and Editing Contacts**, handles settings related to contacts, including the contact record page, search settings, contact types, and address settings. We will walk through each of these areas.

Site Preferences controls what content areas are visible in different parts of the system. For example, if you are not planning to use tags as a categorization tool, you should remove it from your views. Don't need to have immediate access to the changelog (which records a running list of when edits to a contact record was made, with the name of the user and timestamp)? Remove it from your views.

The preferences are broken into four areas:

- **Viewing Contacts**: Controls the tabs that appear across the top of the contact record.
- **Editing Contacts**: Controls elements that will appear in the contact edit view (accessed from the contact summary tab).
- **Contact Search**: This advanced search tool groups fields by their type. You expand a group panel in order to access its respective fields. Use the options here to disable panels you don't want to be displayed.
- **Contact Dashboard**: CiviCRM has a special page, which can be exposed to logged-in website users called the **Contact Dashboard**. The dashboard summarizes the user-related records, including their membership history, event registration history, donation history, and pledge history. In addition, users may see related contacts that they are permissioned to edit.

As you initially configure this section, you may be uncertain what options to select. Remember that you can always return at a later time to modify your settings. You will find whether you need or don't need certain elements listed here as you progress through the site implementation and begin working in the system.

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The final option on this page lets you set your preferred **WYSIWYG editor**. The editor toolbar will appear on any HTML text area in your site. We recommend using the same one your CMS uses, if possible. For Joomla! users, future versions of CiviCRM will provide support for integrating the system default and user-specified WYWSIWYG editor (beginning in v3.3).

Address Settings provides similar functionality, allowing you to choose what is available for mailing label generation and the contact's address block.

Common changes to this page include removing **{contact.supplemental_address_2}** from the mailing label (most organizations operate with two line addresses), and hiding the **Addt'l Address 2**, **Latitude** and **Longitude** values. Generally, you will rely on the geocoding function to populate these values without the need for user involvement.

If you are interested in producing reports that are sorted by address, such as, walk lists for foot canvassing, then you should turn on **Street Address Parsing**. This enables a functionality that attempts to automatically parse the street number, street name, and unit number from the street addresses entered into the system. As of version 3.3, American, Canadian English, and Canadian French street addresses are supported.

The last setting on this page handles address standardization. CiviCRM will integrate with the USPS web tools API to validate the address entered. Note that the tool only checks if the address is valid; it does not determine if the contact name is on record at that address. Before completing this section and enabling the tool, you must apply to the USPS and receive an ID and URL. This can be done at: `http://www.usps.com/webtools/address.htm`.

The next configuration item in our checklist is **Mapping and Geocoding**. CiviCRM supports automated geocoding of addresses through Google and Yahoo!. First, visit your preferred service and obtain a key. Then, select the provider and enter your key on this page. CiviCRM will geocode the addresses as they are created or edited. When viewing a single contact record or search result list you can view a map of the address or multiple addresses (if you are looking at search results), while taking advantage of other functionality provided by Google/Yahoo!, such as plotting directions to the location.

Keys can be obtained from:

- Google: `http://code.google.com/apis/maps/signup.html`
- Yahoo!: `http://api.search.yahoo.com/webservices/register_application`

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Moving on, the **Search Settings** controls which fields are searchable using the simple search tool, and how the search functions operate and display results. The options include:

- **Automatic Wildcard**: This enables the users to enter partial text and have search results return any matches in which that text appears, assuming wildcards before and after the search string. Larger databases may want to disable this option as it will slow the search performance and return a larger resultset.
- **Include Email**: This will search both contact names and e-mail addresses for the search text.
- **Include Nickname**: This will search contact names and nicknames for the search text. If you are a heavy user of nicknames, this is a very valuable feature. If not, you might consider disabling it as it slows down the search processing if you have a large number of contacts.
- **Include Alphabetical Pager** and **Include Order By Clause**: These are useful features that facilitate navigation through search results. However, they both can impact performance on large databases. If you are experiencing poor response times while searching, consider turning one or both of these off.
- **Default Contact Search Profile**: After conducting a search, the result list table displays the contact name, address, phone, and e-mail. If you would like to set an alternative set of fields to be displayed by default, you must first build a profile (a collection of fields) and then select it from the **Default Contact Search Profile** option.
- **Smart group cache timeout**: This controls how frequently the contact records in a smart group are cleared from the cache. A smart group is a saved search; caching improves performance when one is pulling the list of records from the search. By default, the cache is cleared every time a contact record is added or edited. This ensures that any changes to records are reflected in the dynamic search results. Recreating the cache each time it is cleared takes time, especially if you have a large number of contacts in smart groups. If you don't need up-to-the-second accuracy on smart groups, you can improve page load times on contact saves by increasing this value (five minutes is recommended).
- **Autocomplete Contact Search**: At the top left of the horizontal navigation bar is a quick search field. As you type in the field, the system will display possible matches for the value typed. The possible match display will always include the contact name, but may also include e-mail, phone, and address fields. Use the **Autocomplete Contact Search** option to select what fields should be included. Adding options can be helpful as you can distinguish between contacts with the same name based on their e-mail, or any other value. Don't select too many options, however, as it will clutter the result drop-down and make it difficult to read the list.

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- **Miscellaneous**: The next configuration page in our checklist, **Miscellaneous**, contains various options for system operations.
- **Dashboard cache timeout:** The dashboard is the CiviCRM home page displayed when you first enter the system. You may configure the dashboard to display reports, or "dashlets," providing a helpful summary of system data on a single page. Since the dashlet reports may pull from just about any data in the system depending on how you've configured it, it may take some time for the page to load. System caching improves this by taking a static snapshot of the report data, and only reloading from live data on a periodic basis. You can control how frequently the cache is emptied with the **Dashboard cache timeout** option.
- **Contact Trash & Undelete**: This is a useful option for organizations that need to have stricter control over the deletion of contact records, including their contribution information. It can be disabled to simplify workflows and improve performance. When enabled, contacts deleted through the contact record, search result tasks, or as a result of a merge, will be "trash"—marked as deleted but retained in the database. You may later use advanced search to find these contacts and delete permanently or restore them.
- **Version Check & Statistics Reporting**: This helps you, as an implementer, to keep track of the latest release of CiviCRM. If your installed version is older than the current stable release, CiviCRM will place a notification at the top of administration pages to alert you. If this option is turned on, basic statistics will be sent back to CiviCRM so the core development team has a basic sense of what version people are using, what environment it's being hosted on, and the size of databases. These statistics do not contain any data from your site—they only include aggregate statistics of your data and system environment information. Wherever possible, leave this turned on, as it is very helpful for the core team to understand how the community is using the software; often it will inform the direction of future development.
- **Maximum Attachments**: When generating e-mails or creating activities, users are allowed to attach files. Set the **Maximum Attachments** here to prevent too many from being attached at a time.
- **reCAPTCHA**: Lastly, you may enable anti-spam tools for your online forms using reCAPTCHA. reCAPTCHA helps ensure the form is completed by a human and not a computer. It presents words or an alphanumeric string in a graphical form, usually with some kind of warping or other visual obstruction that is hard for computers to decipher. If you plan to have publicly available forms on your site allowing users to enter data you should consider implementing this.

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First, sign up at `http://recaptcha.net/` to obtain a public and private key. Then return to this page to complete the form. Once configured, you enable **reCAPTCHA** on a form-by-form basis in the **Advanced Settings** panel of your profile's **Settings** page. We will discuss this further when we cover profile forms and the process of exposing data to your website.

- **Contact Types**: The last configuration page in this section is for **Contact Types**. CiviCRM has three primary contact types—**Organization**, **Individual**, and **Household**. Contact types are used to distinguish the types of contact records you maintain. Each type will have some unique data fields, in addition to fields common to all. For example, the first name and last name fields are appropriate for individual records, but not for organization records, such as a business. In contrast, address fields are common to all.

Beyond the three primary contact types, you may create additional subtypes to categorize your records. You may also rename the existing primary types using this configuration tool. There are a few important things to remember when thinking through contact subtypes:

- There are several benefits to using subtypes to organize your records, but chief among them is the ability to create custom fields assigned to one or more subtypes. Consider a school that is using CiviCRM to track both parents and teachers. These are both individual contact types, but the data collected for each would be very different. The school may want to know the skill sets for parents who wish to volunteer, or track if either parent is an alumnus of the school; teacher records, on the other hand, would track information about their educational experience, history of classes taught, and employment-relevant human resource data. Creating subtypes allows you to segment the data you are collecting.
- Subtypes are patterned after one of the three primary contact types. When creating your subtypes, first think through which of the three main types the subtype should be based on.
- A contact record may currently only be assigned one contact type. Consequently, be sure that your subtypes are mutually exclusive. In other words, don't create subtypes such that a new contact could potentially fit into more than one subtype or there could be ambiguity about the best place for the contact to fit. There are many other ways to categorize your contacts; subtypes should only be used for high-level categorization where there is a fundamental difference between the nature of the contacts.

For a more complete review of contact subtypes and additional guidance on how to think through your system structure, refer to *Chapter 4*, *CiviCRM Basics: Moving through the System and Working with Contacts*.

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Sending e-mails

Having addressed core configuration and contact-related settings, we now turn our attention to e-mails generated from the system. CiviCRM may be configured to automatically generate e-mails for end user actions, such as registering for an event or making a donation. Additionally, administrators can send e-mails to one or more contacts using activities or CiviMail, the mass e-mail distribution tool. Though you are not required to use e-mail sending capabilities in order to use CiviCRM, you will miss out on a significant functionality if you choose not to.

First, set up your **Outbound Email** configuration at **Administer** | **Configure** | **Global Settings** | **Outbound Email (SMTP/Sendmail)**, and then choose **mail()**, **sendmail**, or **SMTP**-based mailing mechanisms. **SMTP** may provide more complete bounce headers for return mail processing, though the default **mail()** option is generally sufficient. Your hosting provider may also have a preference, or may only support certain options. Regardless of which option you choose and configure, be sure to use the built-in testing function and confirm receipt of the e-mail. This quickly and easily ensures that the outbound e-mail is working.

If you plan to use CiviCRM for large broadcast e-mails, be aware of the responsibilities involved in maintaining a good sender reputation with ISPs and organizations that maintain whitelists/blacklists. Also be aware of the potential server load caused by large mailings. You may want to consider a third-party SMTP provider if you plan to use CiviMail on a large scale.

Once you have tested outbound e-mail, configure the settings at **Administer** | **Configure** | **From Email Addresses**. When sending e-mails from CiviCRM, the logged in user's e-mail will be the default FROM address. However, you may configure additional addresses available to the system and select them while sending an e-mail.

For example, your organization might have service-based generic e-mails, such as `events@my.org`, `questions@my.org`, and `membership@my.org`. Depending on your hosting setup, the FROM e-mail addresses used may need to exist in your mail server as mailboxes or forwards.

Handling return e-mail traffic

The CiviMail component provides important functionality for processing the inbound e-mails. These e-mails are received and processed by the system for three purposes:

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- Bounce handling of invalid e-mails and temporarily undeliverable e-mails. Without this functionality, you increase the risk that ISPs will, at some point, label your server a spammer. Prevention is the best medicine, as it can be difficult to track whether you have been blacklisted or to respond quickly and effectively if you have been. This isn't merely a reputation problem: when your e-mail is not being delivered, it can significantly impact donations, membership signups and renewals, and event attendance.
- Secondly, return mail processing provides support for e-mail-based unsubscribes, opt-outs, and resubscribes.
- Finally, CiviCRM supports the ability to receive e-mails and log them as **Activity records** associated with contacts in the **From**, **To**, and **CC** lines. As you generate e-mails from your web-based or desktop e-mail client, you can automatically attach a copy of the e-mail to existing or new contact records using this functionality.

Unfortunately, configuring the return e-mail channel can be tricky, and may be one of the more technically challenging aspects of installing and configuring CiviCRM. It is much easier now than it was a few years ago, but is still an area where you may want to obtain professional support to ensure proper functioning.

Alternatively, CiviSMTP (`http://civismtp.uas.coop/drupal/node/3`) is a paid service that takes care of most of the technical challenges involved in setting up and running CiviMail. The service is provided by the **Urban Alliance for Sustainability**. While the cost is low, there are some constraints on the staff support available to users. Besides the obvious negative factor of having to pay regular fees for the service, there is a small degradation in performance that may sometimes result from having this service located external to your site's server (and potentially geographically remote to your server). That being said, this is a relatively easy-to-set-up-and-operate service that should be an attractive option for a large number of CiviCRM installations. Note that it is not an official service offered by the CiviCRM project, but is owned and operated by a third-party provider. There are many other third-party SMTP service providers that can also be integrated into CiviMail.

Before walking through configuration of the return channel processor, let's review the broader subject of maintaining a good mailing reputation.

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Maintaining a good e-mail server reputation

Any broadcast e-mails sent by your system will be monitored by various spam detection systems operating on the Internet. While you do not have direct control over those systems, you do have the ability and responsibility to construct and manage your broadcast e-mail systems in such a way so as to minimize the likelihood that you will be flagged as a spammer. This process of reputation management involves domain record configuration, including sender details in your e-mails, providing unsubscribe and opt-out tools, and processing bounced e-mails so that you are not repeatedly mailing to bad e-mail addresses, and so on. Each of these things will help contribute toward lower spam scores and ensure you are able to continue reaching your constituents effectively through broadcast e-mails. In this section we will take a look at DNS (domain record) related considerations.

The first step is to set up an SPF record in the DNS for your domain, and ensure that it is correctly configured whenever you move servers. The Sender Policy Framework (SPF) identifies to the world the hosts that are specifically allowed to send e-mail from your domain, those not allowed, and others about which nothing can be said. Your CiviCRM server and domain's outbound mail server (if different), should both be identified in the SPF as "allowed to send (pass)". The more specific and limited your SPF record is, the more effective it will be in contributing toward reducing CiviMail deliverability issues. Unfortunately, users who travel with laptops through various IPs while sending e-mails may make it difficult to lock down the sender policy framework tightly.

A second useful approach to improving your server's reputation is to set up a reverse DNS. In the *Sending Email* section, you should have configured and successfully tested your outbound e-mail settings. In order to determine if everything is really working correctly, use CiviCRM to send an e-mail to an account you can access that is not on your server, for example a Gmail or a Hotmail account. Then, examine the e-mail header for a couple of things. In Gmail and Google Apps, you can do this by:

1. Opening the message.
2. Clicking on the other actions dropdown beside **Reply** or **Reply to all**.
3. Selecting **Show original**.

Look for a **Received-SPF** header record. It should indicate either **neutral** or **pass**. You may also find other records such as **Authentication-Results: spf=neutral**.

If you are having trouble with SPF, the issue can sometimes be traced to the identity that is provided by or about your server when it sends e-mails. Check through the **Received: From** header records until you get to your originating server, and perhaps beyond it, to your domain on a localhost. Raise any issues or questions you have with the tech support at your ISP.

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Reverse DNS is the process of translating IP addresses to hostnames, the opposite of the forward DNS process, which takes the commonly used domain name and translates it to an IP address. Setting up a reverse DNS record (if not done so already) can help improve your e-mail reputation as the sending IP is validated as a legitimate sender for your domain. If your server has multiple domains sharing a single IP, it may be worthwhile to spend the small amount of money necessary to purchase a dedicated IP (useful for SSL certificates for CiviContribute, as well) so that you can set up the reverse DNS for your domain. A shared IP environment may result in your domain being scored poorly if it resides in the same bank of IPs as spammers or other accounts that are not as careful with their e-mail reputation management.

The third approach to improving your server's reputation is to monitor DNS blacklists and to request organizations that maintain these lists to remove your server from the list, if it is present. You may find yourself listed for a variety of reasons, legitimate or not, including: you haven't been processing bounces properly, recipients of your e-mail may make mistakes in their complaints, or other sites have affected your reputation. It is important to respond to blacklisting promptly as it typically propagates from one service to another.

Configuring the e-mail processor

To process the inbound e-mails, you must have an e-mail account to receive the inbound e-mails and configure a cron job to periodically process the e-mails received (addressed later in this chapter).

Although not required, you will typically want the e-mail account used for bounce processing to be dedicated for this purpose. You also would not typically want it to be a publicized account that constituents would send e-mails to. It should be created and configured solely for the purpose of bounce mail handling.

CiviMail uses **Variable Envelop Return Path** (**VERP**) processing as the method for tracking bounces. The method adds a unique sender address to every outbound message. When a bounce is returned, this unique sender address is used to determine which message, e-mail address, and contact record generated the bounce. Bounces are classified by type (whenever possible) and processed based on the rules configured in the system. Different bounce types will trigger a temporary or permanent hold placed on the e-mail, or record the delivery attempt for future processing, should there be additional bounces on the address.

The preferred setup for VERP is called sub-addressing, which uses a local part format. If your invisible bounce processing e-mail address is `civimail@example.org`, then the VERP address appends a unique value after the separator but before the domain, such as `civimail+12.234ka.241123@example.org`. While this is the preferred method, some ISPs deliberately prevent sub-addressing on their servers because of its prevalent use in broadcast mailing.

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In order to test if you can use this approach, try sending an e-mail to the account you have set up, appending `+test` or `-test` to the account before the `@` symbol (`myemail+test@mydomain.org`). If you receive the message successfully, then you've confirmed support for local part handling and are ready to set up the account for inbound message processing.

If sub-addressing/local part handling is not supported or you prefer not to use that method, you may still be able to process bounced e-mails using a catch-all e-mail account. A catch-all account is configured to receive all the e-mails not addressed to the other mail accounts set up on your domain—it "catches" any e-mails not "caught" by the other mail accounts. In general, catch-all accounts are less desirable as they will typically "catch" quite a bit of spam e-mails, which may be processed along with legitimate bounces. To determine if your hosting environment supports a catch-all account, log in to the system that administers your e-mail accounts and look for the option to designate an e-mail as the catch-all, or contact the hosting support to determine system capabilities. If your system supports catch-all addresses but not sub-addressing, you'll have a slightly higher load on your server, but the system should function fine.

Many CiviCRM installations run on virtual private servers. In most cases, the administrators of VPSs have the authority to configure their e-mail systems to their own needs and preferences. If you don't have the technical skills yourself, it's worth putting in a support request to have things set up the way you want.

The final way to support VERP if your e-mail system can't support either sub-addressing or catch-all addressing is to use a third-party account such as Gmail. The processing time and resource load to support processing remote e-mail stores is higher, and there may be a slight hit to your reputation if the sender domain is different from the FROM e-mail domain; but this is still a viable and effective solution. Note that depending on the system used, you may need to configure filters so that bounced e-mails are not flagged and filed as spam. For example, Gmail accounts should have a filter created that redirects anything flagged as spam back into the inbox so it can be processed by CiviCRM.

Configure CiviMail with the bounce processing account you have set up as follows:

1. Click on **Administer** | **CiviMail** | **Mail Accounts**.
2. Click on the **Edit** link on the default account row.
3. Alter the **Name** as desired and leave **Return-Path** empty.
4. Enter the **Server**, **Username**, **Password**, and **Email Domain** for the account.
    - You should be able to configure a web or a desktop e-mail client to retrieve the mail with these settings.

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5. If the account supports sub-addressing, enter the e-mail address "name+" in the "Localpart" field (include the plus sign, such as "civimail+").
6. If possible, configure the system to use IMAP in the **Protocol** field (preferred over POP3 or other options).
    - Again, use your e-mail client to test whether the account is working properly before expecting CiviMail to talk to it.
7. If possible, set up SSL to improve the security. A locally issued certificate should be fine.

Once the account is configured, manually check if the mail processor script is working by entering the following URL in your browser address bar, where the values in `?name=<username>&pass=<password>&key=<sitekey>` are the ones explained in the Setting up Cron Jobs section below. For example:

- Drupal: `http://example.org/sites/all/modules/civicrm/bin/EmailProcessor.php?name=<username>&pass=<password>&key=<sitekey>`
- Joomla!: `http://example.org/administrator/components/com_civicrm/civicrm/bin/EmailProcessor.php?name=<username>&pass=<password>&key=<sitekey>`

You should receive a message in the browser window stating that the account was successfully accessed and whether any e-mails were processed. Continue testing by creating a contact record in CiviCRM with an intentionally incorrect e-mail address. Add the e-mail to a mailing list group, send a test e-mail through CiviMail, and then run the script again. This time, you should see a message that one e-mail was processed and if you review the contact record, you should see the e-mail placed on hold.

After you have confirmed that bounce processing is functioning properly, **don't forget to configure a cron job** as detailed later in the chapter to automate the regular processing functions.

Note that the configuration guidance outlined above covers the standard setup options for bounce processing. Other configuration options are available, such as return-path headers and alternate protocol options, which may be used if your server setup is non-standard. For more details on how these options may be used, review the online documentation or search for guidance in the forums.

Online payment processors

It's likely that one of the reasons you've decided to implement CiviCRM is to benefit from the ability to process payments through your website, and have it immediately recorded in your contact management system. Whether you are collecting donations, campaign contributions, sponsorship commitments, pledges, membership fees, or event registration fees, all of those transactions will flow through CiviContribute.

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However, before you can collect and process payments through CiviCRM, you must configure a payment processor. Your payment processor, also referred to as the payment gateway, is a service you purchase to allow credit card processing either directly through your site or through redirection to the processor's site. The processor receives the credit card, authorizes the payment, and transfers the funds to your bank (either manually or automatically, depending on the service).

Choosing what service(s) you will use can be challenging as there are many options available. You will want to make sure that whatever service you choose has a corresponding CiviCRM payment processor plugin available; otherwise, you may need to develop a new plugin to integrate with your selected service.

At the time of writing this book, the following plugins were available:

- Authorize.net AIM
- Click and Pledge
- DPS Payment Express
- Elavon Payment Processor
- eWAY (Single Currency)
- FirstData (Linkpoint)
- Google Checkout
- Moneris
- Payflow Pro
- PayJunction
- PayPal – Express
- PayPal – Website Payments Pro
- PayPal – Website Payments Standard
- Realex Payment

A few additional processors, including Chase Paymentech and Quickbooks, have been created or partially created, but for one reason or another, they are not fully integrated or packaged with the core software.

Not all payment processors are created equal. Some are only available in limited regions or have limitations on what currencies can be used. The structure and model for what fees are charged will also differ significantly. If you are planning to use recurring contributions, be sure to investigate if the processor will allow such functionality and ensure that it has been built into the CiviCRM plugin.

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For an updated list of supported processors with details about the functionality they provide, visit `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviContribute+Payment+Processor+Configuration`. Note that not all processor plugins are officially supported by the CiviCRM project. Some have been contributed by the community and rely on community support for ongoing updates.

Integrated versus redirection processors

There are two basic types of payment processors, namely those that allow you to collect and process credit cards directly from your site (integrated), and those that will direct you to the processor's site to handle the transaction (redirection). There are pros and cons to both:

- Those that allow credit card collection directly from your site provide a more attractive and branded solution. The user never leaves your site and the transaction process flows seamlessly from the collection form, to a confirmation page, and a final thank you/receipt page. However, the fees charged by the processing service are typically higher and you must have a dedicated IP with SSL installed in order to sufficiently secure the transaction.
- Those that direct you to the processing site (such as PayPal Standard and Google Checkout) do not require SSL (as the security is handled by the processing site), and can typically be implemented very quickly and may charge lower total fees. However, the redirection to the processing site means that visitors must leave your website to complete the transaction. That may discourage or confuse people from finalizing the payment.

CiviCRM will not work with a shared SSL (commonly offered on many shared hosting environments). You must have the SSL installed on your domain in order for CiviCRM to work correctly. If you implement SSL on your site, be sure to visit: **Administer** | **Configure** | **Global Settings** | **Resource URLs** and enable the **Force Secure URLs (SSL)** option. This will redirect the contribution pages and the CiviCRM administration pages to SSL.

If you are new to online payments and are unsure how much your constituents will respond to the new functionality, consider starting with the off-site solution where you are directed to the processor's site to complete the transaction. At some point, you may reach a threshold where the additional cost for handling the transaction directly through your site is justified.

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SSL certificates are domain-form-specific. A certificate purchased for `www.yoursite.com` will not validate for `yoursite.com`, as the root form of your domain and the `www` form are not considered the same. In addition, CiviCRM references some resources through the site URL, and may not function consistently if the root and `www` form are used interchangeably. The easiest way to address this is by adding Apache directives to an `.htaccess` file in your public website directory. For example, if you wish to redirect from the root form to the `www` form, add the following (with your domain name):

```
RewriteEngine On
# Redirect root domain to www. form
RewriteCond %{HTTP_HOST} ^yoursite\.com$ [NC]
RewriteRule ^(.*)$ http://www.yoursite.com/$1 [R=301,L]
```

Then, make sure all references to resources in your CiviCRM configuration use the `www` form of the domain. In addition to ensuring proper function of CiviCRM and your SSL certificate, this will help create consistent domain branding of your website.

Configuring the payment processor

Once you've decided what payment processor to use and have gone through the necessary application process with the company you are using, you may set up the account in CiviCRM. From the configuration checklist, select **Payment Processors**.

The fields you must complete will depend on which processor you use. In almost all cases, CiviCRM will let you configure the credentials for your live processor and a sandbox (test) account. The sandbox credentials will be used when you use the **test drive** option in contribution pages. See your payment processor for details about creating a sandbox account.

If you do not yet have a payment processor account but would like to begin setting up and testing contribution pages or other payment handling forms, use the **Dummy Payment Processor** option. You may then configure your forms and enable **contribution handling** (including events and membership forms). No transaction is triggered when a dummy processor is used—it should only be created for temporary testing purposes.

CiviCRM supports configuration of multiple processors. At the time you create a contribution page or event registration page you will be asked to select your desired processor to be used by this form.

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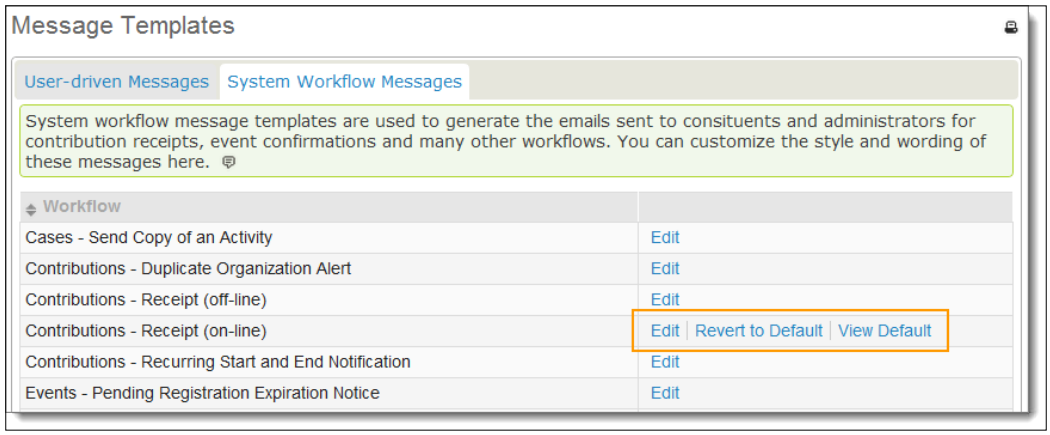
After configuring your payment processor, be sure to test it by generating a live contribution record. Don't rely on the sandbox/testing tools alone; always run a live transaction with a real credit card to test the system before exposing live donation/pledge/event/membership forms that will process payments to the public.

System workflow templates

After completing the setup of your payment processor, return to the configuration checklist and visit the **System Workflow Templates** page. As people visit the CiviCRM forms on your site and you, as an administrator, work with contact records, there are various e-mails generated by the system and sent to your contacts. Each of these e-mails can be customized through this page.

If you edit any of these e-mails and save the changes, you will have the option of viewing or reverting to the original version.


Message Templates
User-driven Messages
System Workflow Messages
System workflow message templates are used to generate the emails sent to consituents and administrators for contribution receipts, event confirmations and many other workflows. You can customize the style and wording of these messages here.
Workflow
Cases - Send Copy of an Activity
Edit
Contributions - Duplicate Organization Alert
Edit
Contributions - Receipt (off-line)
Edit
Contributions - Receipt (on-line)
Edit
Revert to Default
View Default
Contributions - Recurring Start and End Notification
Edit
Events - Pending Registration Expiration Notice
Edit

The templates contain tokens that are placeholders for contact and record-specific field values. For example, if you want the e-mail to be addressed to "Dear First Name," you would insert the **First Name** token. When editing the template text, you may use the **Insert Tokens** button to insert basic contact fields.

Take care when editing templates. Most of these contain a number of conditional clauses (`if/else` statements) in order to ensure that the resulting e-mail is customized to the specific transaction. After making edits, make sure you test it with various options to confirm that it is functioning properly.

CiviCRM uses the Smarty template engine (`http://www.smarty.net`) to render pages, including workflow e-mails. You may insert basic logic and make use of other Smarty functions when creating your e-mail template.

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Organization, customization, and components

At this point you've completed the most essential steps in your initial site configuration. The **Configuration Checklist** includes additional sections that we will briefly review here and cover in more detail later while walking through the full implementation of their respective functions. These additional sections are **Organize your contacts**, **Customize Data, Forms and Screens**, and **Components**.

Organize your contacts

As you begin importing and entering contacts, you will begin looking for ways to organize and categorize them. There are many ways to do this in CiviCRM, but the two primary methods are with tags and groups. Tags are a hierarchal categorization tree you create in order to classify contacts, or a running list of freeform text (tagset). Groups are collections of records that may be dynamically created (**Smart Groups**, the equivalent of a saved search) or manually collected (for example, an opt-in mailing list). We discuss configuration and implementation of these in *Chapter 4*, *CiviCRM Basics: Moving through the System and Working with Contacts*.

Customize Data, Forms and Screens

CiviCRM's core data fields cover all the basic contact and communication fields you would expect. Inevitably, you will have additional pieces of data specific to your organization that you want to record in the database. CiviCRM's **Custom Data** tool allows you to attach additional fields to almost any existing type of record. For example, you can add fields to a contact record, contribution record, event registration, relationship type, and so on. We will look at creating custom fields in *Chapter 5*, *Collecting, Organizing, and Importing Data*.

In many, but not in every case, the data fields you've created will be included in online forms and exposed to your site visitors. We use **Profiles** to select core and custom fields for inclusion in specific forms. We will begin to look at constructing and using profiles in *Chapter 6*, *Communicating Better*.

Components

As noted earlier in this chapter, CiviCRM components represent the major functional areas of the software. Your first configuration step was to enable/disable the components you plan to use. This last block in the **Configuration Checklist** lets you access settings and options specific to each component. As we explore each of these functionality areas throughout this book, we will examine the configuration options specific to each.

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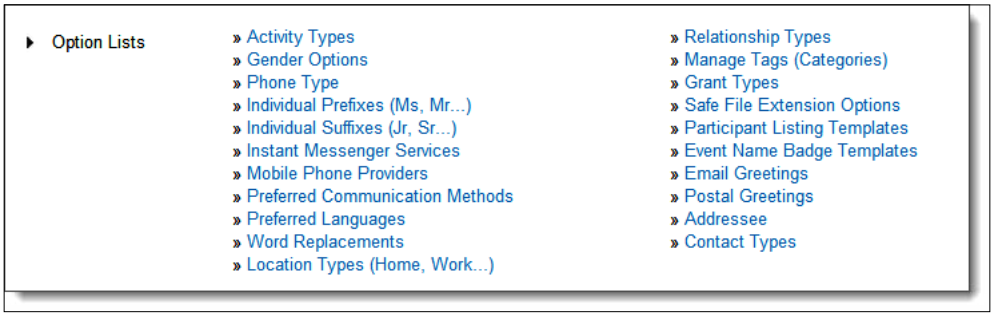
Option Lists

Although we have completed a review of the configuration checklist, there are several additional settings we want to explore. You may choose to configure these areas now, or simply make note of them and return to modify them later in your implementation process as the need arises.

As you work with CiviCRM, you'll quickly find that there are numerous option lists providing selection choices for fields. These include location types, phone types, individual prefixes and suffixes, activity types, and many more. A full list of configurable options is found on the **Administration Console**, and a partial list of the most frequently modified options is available in **Administer** | **Option Lists**, as shown in the following screenshot:



The available settings for each of the options will be specific to the option type. In most cases it will be self-explanatory; and most are documented with inline help text. If the option contains both a name and a label field, the name field is used for the unique option value, and the label field is what will display in the option list.

Synchronization with CMS users

If your Joomla! or Drupal website has been in operation for some time, you likely have an existing list of website user accounts. These user accounts will not immediately have corresponding CiviCRM contact records unless the user has logged into the site and visited a CiviCRM page. As part of your initial system configuration, it is best to synchronize those CMS users with CiviCRM. Access this option by visiting **Administer** | **Manage** | **Synchronize Users to Contacts**.

Triggering this tool will create a linked contact record for each CMS user in your website. It should only be necessary to initiate this synchronization once. Thereafter, new CMS users will be linked to CiviCRM as they are created or visit a CiviCRM resource.

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There are various ways this will occur depending on whether you are using Joomla! or Drupal, and based on what account creation tools you have implemented. We will review some of the available options later in this book.

Let's take a moment and understand exactly how CiviCRM contacts relate to CMS users.

Your website (CMS) users are individuals having the permission to log in to the site using a username and password. CiviCRM contacts are records residing in your constituent database. CiviCRM creates a link between the CMS user and its corresponding CiviCRM contact record. When the user logs in to your site, you can then expose the data fields specific to that contact. For example, you could enable your logged in contacts to edit their address and phone details.

While every CMS user should have a corresponding CiviCRM contact record, the reverse is generally not true. You will typically maintain the contact records for individuals (and certainly organizations and households) that do not have a corresponding user account.

As you configure and plan your site, begin thinking through who exactly should have access to the site; what data fields might you expose to your website users for editing and updating, and what workflow you prefer for creating and granting permissions to new users.

Drupal access control for CiviCRM

Drupal has an effective fine-grained permissioning system built in to its core that can be extended in numerous ways through specific modules. CiviCRM extends the Drupal access control system to allow control over specific functions within CiviCRM. We will assume a basic understanding of the Drupal access control system throughout this section (visit `http://drupal.org/node/22275`).

CiviCRM does not currently support access control permissioning with Joomla! v1.5, primarily due to the access group/level limitations of the CMS. With the release of Joomla! v1.6, which includes a robust permissioning system, the CiviCRM v4.0 release will include full access control integration. The list of Drupal permissions found below will be identical to those available in the Joomla 1.6 compatible release.

Access is provided to users based on their roles and can be added or removed as a person takes on, or gives up responsibilities for accessing and administering functionality and content in CiviCRM.

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Drupal sites always have two built-in roles: anonymous user (anyone who is not signed in, including those who do not have user accounts), and authenticated user (anyone who is currently signed in). Additional roles are typically created for system administrators and for groups of people who need to be allowed to do some things that others are not permitted to do, for example, moderating comments or other user-generated content.

We don't recommend creating an overly complex set of roles for CiviCRM. Ideally, you will set up permissions so that people are always allowed to do what they need to do, and aren't allowed to do things that are dangerous to the system, its data, or the organization's reputation for preserving the privacy of the personal data it holds. Often you can get by with a single role called CiviCRM administrator, and perhaps another one allowing users to view and edit financial information.

Here are the permissions that can be selectively enabled or disabled by role in Drupal at **Administer** | **User management** | **Permissions**:

- **access CiviCRM**
- **access CiviContribute**
- **access CiviEvent**
- **access CiviMail**
- **access CiviMail subscribe/unsubscribe pages**
- **access CiviMember**
- **access CiviPledge**
- **access CiviReport**
- **access Contact Dashboard**
- **access Report Criteria**
- **access all custom data**
- **access deleted contacts**
- **access uploaded files**
- **add contacts**
- **administer CiviCRM**
- **administer Reports**
- **administer Tagsets**
- **administer dedupe rules**
- **administer reserved tags**
- **delete activities**

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- **delete contacts**
- **delete in CiviContribute**
- **delete in CiviEvent**
- **delete in CiviMail**
- **delete in CiviMember**
- **delete in CiviPledge**
- **edit all contacts**
- **edit all events**
- **edit contributions**
- **edit event participants**
- **edit groups**
- **edit memberships**
- **edit pledges**
- **import contacts**
- **make online contributions**
- **merge duplicate contacts**
- **profile create**
- **profile edit**
- **profile listings**
- **profile listings and forms**
- **profile view**
- **register for events**
- **translate CiviCRM**
- **view all activities**
- **view all contacts**
- **view event info**
- **view event participants**

As you can see, these permissions fall into different sorts of groups:

- Accessing components of CiviCRM (for example, accessing CiviMember)
- Performing certain operations on certain types of objects (for example, adding contacts)
- Accessing administrative interfaces (for example, administering dedupe rules)

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- Accessing non-administrative functions (for example, making online contributions and registering for events)

Drupal permissioning is cumulative—if a user is assigned three roles, the combined permissions from all three roles will determine what the user can do in the system. Because permissioning explicitly allows the specified access, if any of the three roles have been granted permission it will impact the users's access.

Three Drupal modules are included in CiviCRM that allow information about contacts in CiviCRM to be used in ways that interact usefully with the Drupal access control system.

CiviGroup Roles Sync

This module allows all the users in a particular Drupal role to be placed in a CiviCRM group, and vice versa. This allows CiviCRM to put contacts into groups and have that result in additional access privileges in Drupal. Signups on CiviCRM profile forms can be automatically added to groups, which could then be used to enable access to parts of your website. Smart groups can also be created for all donors, or other criteria like geography, to provide differential access to parts of your site.

In order to enable CiviGroup Roles Sync, follow these steps:

1. In Drupal, click on **Administer** | **Site building** | **Modules**.
2. Click to enable the **CiviGroup Roles Sync** module in the **CiviCRM modules** fieldset.
3. Click on the **Save Configuration** button.

In order to configure CiviGroup Roles Sync, follow these steps:

1. Create one or more non-default Drupal roles as follows:
    - In Drupal, click on **Administer** | **User management** | **Roles**.
    - Enter a name for the new role, and then click on the **Add role** button.
    - Assign one or more users to the new role, for example:
    - In Drupal, click on **User management** | **Users**.
    - Click on **edit** beside a username.
    - Under **Roles**, enable the checkbox beside the new role.
    - Click on **Save**.
2. Create one or more CiviCRM roles as follows:
    - In CiviCRM, click on **Administer** | **Manage** | **Access Control**.
    - Click on **Manage ACL Roles**.

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- Click on **Add ACL Role**.
- Enter a name for the role in the **Label** field. You can also optionally enter a **Description**, increase or lower the **Weight** of the role to make it appear lower or higher on lists with respect to other roles, or uncheck the **Enabled?** field to disable the role.
- Click on **Save**.

3. Create a group of users to assign to CiviCRM roles if necessary under **Contacts** | **Manage Groups**.

Access Control must be enabled as the **Group Type** in the **Settings** for the group.

4. Assign users in an access control group to each CiviCRM role:
   - Click on **Administer** | **Manage** | **Access Control**.
   - Click on **Assign Users** to assign users to CiviCRM ACL Roles.
   - Click on **Add Role Assignment**.
   - Select an ACL Role and a group of users in **Assigned To**.
   - Optionally uncheck **Enabled?** in order to disable the assignment.
   - Click on **Save**.
5. In Drupal, click on **Administer** | **Site configuration** | **CiviGroup Roles Sync**.
6. Click on **Add Association** Rule.
7. Select a CiviCRM group and a Drupal role from the selection lists.
8. Click on the **Add association** rule.

CiviMember Roles Sync

This module provides two-way synchronization between specific membership types with specific membership status and Drupal roles. For example, this allows you to provide all the current members with access to a site, and have that automatically removed if they don't pay their membership renewal fee.

In order to enable the CiviMember Roles Sync module, follow these steps:

1. In Drupal, click **Administer** | **Site building** | **Modules**.
2. Click to enable **CiviMember Roles Sync** module in the **CiviCRM** modules fieldset.
3. Click on the **Save Configuration** button.

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In order to configure CiviMember Roles Sync, follow these steps:

1. Create one or more non-default Drupal roles as follows:
    - In Drupal, click **Administer** | **User management** | **Roles**.
    - Enter a **Name** for a new role, and then click on the **Add role** button.
    - Assign one or more users to the new role, for example:
    - In Drupal, click on **User management** | **Users**.
    - Click **edit** beside a **Username**.
    - Under **Roles**, enable the checkbox beside the new role.
    - Click on **Save**.
2. Create and configure CiviCRM membership types and statuses at **Administer** | **CiviMember** | **Membership Types** and **Administer** | **CiviMember** | **Membership Status Rules** (see *Chapter 8*, *Growing Your Membership and Interacting with Members* for more details).
3. In Drupal, click on **Administer** | **Site Configuration** | **CiviMember Roles Sync**.
4. Click on the **Add Association Rule** tab.
5. Select a CiviMember membership type and select a Drupal role in order to implement that every contact with a current status for that membership type has that Drupal role assigned to it.
6. Click to enable the appropriate statuses for both **Current Status** and **Expired Status**. If you are using the default CiviCRM membership status rules, you'll probably want to enable **New**, **Current**, and **Grace** for **Current Status**, and **Expired**, **Pending**, **Cancelled**, and **Deceased** for **Expired Status**. When the membership type for a contact is changed, these lists will be checked to determine if the selected Drupal role should be assigned to or unassigned from the contact's Drupal account.
7. Click on **Add association rule**.

CiviCRM OG Sync

This module can ensure that changes in the contacts in CiviCRM groups are reflected in associated Drupal organic groups. However, as the organic groups module does not provide an appropriate way to notify CiviCRM of changes in membership of organic groups, we find this module to be of limited usefulness.

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CiviCRM access control under Drupal

In addition to the permissions that CiviCRM exposes to the Drupal access control permissioning system we saw above, CiviCRM has its own access control capabilities that provide finer-grained control. In general, you can control more types of operations through CiviCRM's interface. Also, you can specify subsets of data to receive permissions; for example, you can restrict editing fields on a group contact by a group of users.

The limitations of Joomla! 1.5 preclude CiviCRM from providing its own access control when installed under Joomla! CiviCRM v4.0, with support for Joomla 1.6, will provide these capabilities.

To simplify configuring your access control system in both Drupal and CiviCRM, you may want to consider using the CiviGroup Roles Sync module. The same users can then be in the same CiviCRM roles, as in the Drupal roles used for Drupal access control. Giving the same names to CiviCRM and Drupal roles is a very good practice when you are adopting this approach.

A Drupal permission that can be assigned to a role tends to combine two concepts—an operation and a set of data. For example, "access comments" includes the operation of "access" and "comments" as the data to be operated on. Permissions in CiviCRM access control formalize and split these notions apart. As a result, they include three elements as follows, instead of Drupal's two:

- CiviCRM role
- Operations (View, Edit, Create, Delete, Search, All)
- Data

Though this makes it a bit more cumbersome to specify permissions, it provides a very flexible structure for controlling access.

In the discussion on CiviGroup Roles Sync and CiviMember Roles Sync in the preceding section, we reviewed how to create CiviCRM access control roles (at **Administer** | **Manage** | **Access Control**, **Manage Roles**) and how to assign users to those roles (at **Administer** | **Manage** | **Access Control**, **Assign Users to CiviCRM ACL Roles**). Now it is time to put it all together and create the CiviCRM access control lists:

1. Click on **Administer** | **Manage** | **Access Control**.
2. Click on **Manage ACLs**.
3. Click on **Add ACL**.

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4. Select a **Type of Data**:
    - **A group of contacts**: When selected, you can select the **Group** from the drop-down list of groups that have **access control** as their **Group Type** in **Settings**, or leave the value at **- select -** to create an ACL for a **Role** and **Operation** that applies to all contacts.
    - **A profile**: This is useful to lock down the use of certain profiles to certain purposes. You can select the profile or leave the value at **- select -** to **create** an ACL that applies to all profiles.

Make sure that all the users that are expected to complete online contributions, event registrations, or other similar functions like newsletter subscription signups have the **Create** operation permission for all profiles on those forms.

    - **A set of custom data fields**: When selected, you can select the **Custom Data** group of fields or have the permission apply to all the custom fields.

As of version 3.2, there is a known limitation of CiviCRM: the **View** operation on custom data fields also permits editing, and the **Edit** operation also permits viewing.

    - **Events**: This is useful to restrict users from viewing the event information page, or from registering (using the **Edit** operation) for events.
5. Select an **Operation**, a **Role**, and provide a **Description**.
6. If desired, uncheck **Enabled?** to disable the ACL.
7. Click **Save**.

ACL permissioning can be tricky as you must make sure that the roles assigned to users don't conflict with each other. If you are using CiviCRM's internal granular permissioning, you must also be careful that you don't conflict with the Drupal/CiviCRM permissions assigned to the user via the Drupal role. For example, a user with **access all custom data** permission in Drupal would override a specific custom data set permission defined in CiviCRM.

As a general rule, take the time to do sufficient testing for any roles you've created, be it in Drupal or CiviCRM. Especially if you have sensitive information, you must be sure to restrict access to it.

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Dashboard

When you first log in to your CMS and visit CiviCRM, you land at the **Dashboard** page. This page can be configured to display reports from your system in two columns. It is configured directly from this page using the **Configure Your Dashboard** button.

Clicking displays a visual representation of two columns and a list of available reports. Simply drag and drop from the available reports block to one of the two columns and click on **Done** to save your settings.

The available reports, or dashlets, come from the main reports list (**Reports** menu). You must configure a report to be available as a dashlet before it will appear in the Dashboard configuration page.

Navigation

Throughout our review of CiviCRM, we have referenced the default location of tools and options in the horizontal navigation bar. However, you may add, move, remove, or rename the menu options in your site. For example, if your organization is a heavy user of activities (used to track communications with constituents) you may want to move the **Activity Search** and **New Activity** menu items to the main header.

You modify the navigation menu by going to **Administer | Customize | Navigation Menu**. The menu is displayed as an expandable tree. Click on the **New Menu Item** button to create a new option, right-click on an existing option to modify it, and drag and drop items to move them to a new location.

While creating or editing an option, you enter the URL for the page. Pages found within the site can be referenced using relative URLs. However, you also have the flexibility to create menu options to non-CiviCRM locations and links outside of your site using a full URL (including `http://`). Drupal sites will use the **Permission** selection tool to determine which users may see and access the menu item.

After making modifications to the menu, a notification block will appear at the top of the page. Click on the **Click here** link to reload the menu and review your changes.

Setting up cron jobs

A cron job is a time-based trigger configured on your hosting server. You set up cron jobs to automatically run scripts on a periodic basis. CiviCRM ships with several optional scripts that can be run through a cron, providing automated batch record processing for various functions.

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Most hosting services will provide a control panel tool where you can schedule the cron jobs using a graphical interface. You may also set up cron jobs by using the `crontab` command over SSH. Different flavors of Linux also have locations you can place scripts in, in order to have them executed periodically. For example, the files in `/etc/cron.daily`, `/etc/cron.hourly`, `/etc/cron.montly`, and `/etc/cron.weekly` are executed at appropriate periods on Debian servers. We will focus on reviewing the scripts available with CiviCRM and how best to configure them. You should contact your hosting provider or seek other resources if you need guidance with creating cron jobs on your server.

Before you can run any of the CiviCRM cron scripts, you must configure a key value in your `civicrm.settings.php` file and create a user account permissioned to run administrative tasks on your site (in Joomla!, this must simply be a public backend user; in Drupal, the user should be permissioned to perform CiviCRM administrative tasks). The combination of a site key value and username/password help ensure that your cron jobs can only be run by a valid source. The key value should be a 16-32 character alphanumeric string. You may generate one using online services such as `http://www.thebitmill.com/tools/password.html`. Note that your key value should not contain any reserved special characters, including `& = + $ ? % , / : { } | ' #`.

The `civicrm.settings.php` file will generally be located in the following directory, depending on your CMS:

- Joomla!: `/path_to_docroot/administrator/components/com_civicrm/`
- Drupal: Either `/path_to_docroot/sites/default/` or `/path_to_docroot/sites/yourdomain.org/`

Locate (or create) the site key definition line and add your configured key:

```
define( 'CIVICRM_SITE_KEY', 'your_key_value' );
```

Each cron job you configure will have the following string appended to it:

```
?name=<username>&pass=<password>&key=<sitekey>
```


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For Joomla!, the cron scripts are located in `/path_to_docroot/administrator/components/com_civicrm/civicrm/bin/`, and in Drupal, they will generally be located in `/path_to_docroot/sites/all/modules/civicrm/bin/`. Let's review each of the scripts that can be run through a cron job:

- `ParticipantProcessor.php`: This is used by CiviEvent if you enable waitlisting or require an approval for event registration. Waitlisting is a function available for events that have an attendance cap. Once the registration for the event has filled up, users will be given the option of being added to the waitlist, and if the available space increases or existing registrants cancel, you can allow waitlisted people to register. The script handles participant status updates. **On waitlist** statuses are moved to **Pending from waitlist** when space becomes available for the event. If you configure an expiration period for an event, **Pending** statuses will be changed to **Expired**. In each case, the script will send an e-mail notification to registrants alerting them of the status change. This cron should be implemented only if you plan to use waitlisting or require approval for event registration. The frequency will depend on the level of demand you have for events, and how quickly you want to give waitlisted participants an opportunity to register. In general, it will be sufficient to run this script once a day. Note that in order to use the waitlisting and approval features, you must enable the relevant participant statuses found in **Administer** | **CiviEvent** | **Participant Statuses**.
- `civimail.cronjob.php`: This is used by CiviMail to process scheduled (queued) broadcast e-mails. You must implement this cron if you are using CiviMail. It is generally sufficient to set the frequency to every 15 minutes or half hour. Also note that you may need to review the **Mailer Setting** options to throttle the number of e-mails sent per batch (**Administer** | **Administration Console** | **CiviMail** | **Mailer Settings**). Using the cron frequency and batch limit, you can safely regulate how many e-mails are sent per hour (which may be limited by your hosting provider).

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- `UpdateMembershipRecord.php`: This is used by CiviMember to update membership statuses based on the status rules defined in your system and initiate renewal reminder e-mails. This is a very important script if you are a CiviMember user. Member status rules define when a membership record is considered new, current, in-grace period, or expired (or any other statuses you define). This script must be run in order to process the records against those rules and update them when they pass from one status to the next. It is sufficient to run this once a day, preferably during low traffic times (such as the middle of the night), as it can be a resource-demanding script depending on the size of your database. If you are using the renewal reminder e-mail feature (where a reminder e-mail is sent out to current members a fixed number of days prior to the membership end date), you must create an e-mail template for use by the membership type. This will be discussed in more detail later in this book.
- `UpdatePledgeRecord.php`: This is used by CiviPledge to process pledge reminders and update pledge statuses. When a user pledges donations to your organization, they determine the total value of their pledge and the frequency of their giving. If configured, this script will send pledge reminder e-mails as the date for their next donation draws near. It will also update the status of pledge commitments. It is sufficient to run this script once a day.
- `UpdateAddress.php`: CiviCRM's geocoding functionality generates a latitude and longitude value for addresses when they are created or edited. If you have existing addresses that are not geocoded, or have recently imported new address records, use this script to batch-generate geocode values. You can run this script as and when needed from a browser (after an address import, for example). If you are importing records on a regular basis, it may be useful to configure the script as a cron job on a periodic (for example, weekly) basis, or more frequently as your needs require. Note that both Google and Yahoo have placed limits on how many addresses may be geocoded via API per day. You may need to run this script over several days to complete full geocoding of your data when initially imported to the system.

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- `UpdateGreeting.php`: Each contact record has greeting values which can be used for e-mails, mailings, and other forms of address, such as exports for merge letters. When records are created through the administrative interface, the default greeting values are constructed (for example, Dear Mr. Smith). If you change the default greeting, or have recently imported contacts with no existing greeting values, run this script to update the value for all contacts in your database. It is generally not necessary to run this script through a cron job unless you are importing new contact records on a regular basis. There are several variables that must be appended to the script in order to control what records and fields are impacted (for example, the script running on a Drupal installation may look like `http://<drupal_root>/sites/all/modules/civicrm/bin/UpdateGreeting.php?ct=Individual&gt=addressee&name=<username>&pass=<password>&key=<sitekey>`):
    - `&ct=Individual/Organization/Household` (select one, required): Determines which contact type will be updated.
    - `&gt=email_greeting/postal_greeting/addressee` (select one, required): Determines which greeting value will be updated.
    - `&id=N`: Selects the option value for the greeting or addressee format. This is optional, and would only be used if you want to populate the field with a greeting format different from the configured default one.
    - `&force=1`: Updates all the records using the default greeting format, even if a value already exists.
    - `&force=2`: Updates only those records that have a greeting ID set, but the value of which has not been constructed. This is useful for contact record imports that may have had the default ID assigned, but need to have the greeting text constructed.
- `EmailProcessor.php`: Use this script to configure one or more e-mail boxes (POP3/IMAP) to be polled on a regular basis for bounce processing and e-mail activity processing. The e-mail account configured as the default will be used for bounce processing as described earlier in this chapter, and will also include processing e-mail-based user actions such as unsubscribe/resubscribe/optout. Bounced e-mails will follow rules configured in the system to put the e-mail account on hold, giving you the opportunity to review and correct the e-mail through the system. E-mail activity processing will poll the inbox and attach e-mails as an activity record to existing contact records (if the e-mail is found in the system) or have new contact records created (if the e-mail is not in the system). This is a powerful way to automate communication tracking. For example, you might create a special e-mail account that your staff can optionally CC while sending e-mails to constituents, thus attaching a record of the communication with the contact.

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To identify accounts that should be polled for e-mails to attach as activities, append `&emailtoactivity=1` to the cron job. The frequency of this cron job will depend on how often you send broadcast e-mails, and how quickly you expect to see e-mails display as activities. In most cases, running it on an hourly basis is sufficient. This script is expected to undergo some revisions in future versions to facilitate management of multiple e-mail accounts for the two distinct purposes. Please check the online documentation for the latest updates on script usage.

- `CiviReportMail.php`: CiviCRM reports can be configured to be e-mailed on a periodic basis. For example, you may want a contribution report with the last week's summary of payments e-mailed to your staff bookkeeper every Monday morning, or your Membership Committee Chair may want a membership overview report on a monthly basis. Use this cron job to initiate mailings and configure the frequency in which they should be sent. This cron job works differently from others—you will configure a cron job for each report instance. The parameters are passed in the cron URL (in addition to the user, password, and key values): `.../bin/CiviReportMail.php?sendmail=true&instanceId=3&reset=1`. To determine the report's `instanceId`, visit the report and note the value after `/instance/` in the URL.

Note that some of the scripts require certain values be configured in the code before they can be run. Those that require configuration are saved as `.txt` files. You will see the section that must be configured clearly delineated with commented code. After modifying the file, remove the `.txt` extension so they are recognized as `.php` files, and then configure your cron. For example, the `UpdateMembershipRecord.php` file requires that you determine the FROM e-mail address used for sending out renewal reminders.

As of v3.3, this script uses the default FROM e-mail address defined in the system and consequently does not require you to manually configure the address.

Scripts can be run via cron using curl or wget. Check with your hosting provider for their preferred method and any specific requirements for configuring the cron. The following examples may be helpful:

- Drupal: curl `http://<drupal_root>/sites/all/modules/civicrm/bin/UpdateMembershipRecord.php?name=<username>&pass=<password>&key=<sitekey>`
- Joomla!: curl `http://<joomla_root>/administrator/components/com_civicrm/civicrm/bin/UpdateMembershipRecord.php?name=<username>&pass=<password>&key=<sitekey>`

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- Drupal: wget `http://<drupal_root>/sites/all/modules/civicrm/bin/UpdateMembershipRecord.php?name=<username>&pass=<password>&key=<sitekey>`
- Joomla!: wget `http://<joomla_root>/administrator/components/com_civicrm/civicrm/bin/UpdateMembershipRecord.php?name=<username>&pass=<password>&key=<sitekey>`

The `wget` method creates logfiles by default on your server every time the cron is run. For scripts such as `civimail.cronjob.php`, which may be run very frequently, this will quickly result in huge amounts of files (albeit small in size) saved to your server. Once you've confirmed that the cron job is running correctly, use the `-O – 'URL' > /dev/null` switch (for example, `wget -O - 'http://...' > /dev/null`) to disable logging.

Note that all of the scripts can be run through the browser. If you are running into problems configuring the cron jobs, first confirm that the URLs, with username, password, and key values, are functioning correctly by entering them into your browser address bar. CiviCRM will render errors if any of those parameters are incorrect. Once you are confident that you have the correct URL, continue with the cron job configuration.

The cron job setup we just described is processed through the web server using wget/curl. This is generally the easier way to configure the cron, as it does not require command line/SSH access, and is generally more widely supported. However, running the cron through the web server creates overhead to your site load and is more susceptible to PHP timeouts if you have a large database. Several cron job scripts support processing through the shell in addition to the web server option we have just covered. If you are comfortable working in the shell, have a large database, or experience performance decline as a result of running the cronjobs, you should configure the crons to run through the shell interface. For a full discussion of how to handle this, refer to the following documentation: `http://en.flossmanuals.net/CiviCRM/SystemConfiguration`.

This part of the configuration process is admittedly more technical than most other areas. However, if you take the time to understand the concepts and seek assistance where necessary to wade through the technical pieces, you will find the resulting functionality very rewarding.

As with anything else, be sure to test it thoroughly. Cron jobs can generate logs that are sent to an e-mail address, which is a great way to ensure that they are functioning properly. You should also schedule periodic system reviews in order to confirm that your crons are running as expected.

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Upgrades and maintenance

As with any actively developed software project, you should anticipate the need to upgrade to latest revisions and versions on a periodic basis, and perform regular maintenance on your system. Anticipating these needs and planning accordingly will greatly improve your long-term experience with CiviCRM.

Version and revision upgrades

The CiviCRM project follows conventional terminology for software releases:

- **Versions**: Represents significant software releases with new functionality
- **Revisions**: Represents minor releases and addresses bug, security, and functionality fixes

The core development team aggressively releases two to three major versions each year, and three to four minor revisions in between the major releases. The version number follows the conventional format as well: 3.2.4 = version 3.2, revision 4. You may track bugs and issues reported for a certain version through the CiviCRM website.

Since revisions typically correct bugs or address security issues, you should ideally implement them as soon as they are released. Revisions generally require minimal modifications to your database structure or data; so the potential risk of running into any issues is less.

Before conducting any revision upgrade, back up your database and file system and test to ensure the integrity of the backup files. It is particularly important to have a reliable backup of your database, as you will need to restore the database to the previous version should there be any problems during the database upgrade script. It is also recommended that you perform upgrades on a development server before implementing on your live server. We consider it essential to use a development or staging server for sites that have custom templates and code.

Finally, if you have made any modifications to CiviCRM files, including template (`.tpl`) and `CSS` files, be sure to have a good record of your changes. You will need to review the changes against the new codebase and may need to adjust them. This is particularly true for major version upgrades, as the files are more likely to have significant changes.

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CiviCRM provides some helpful tools for maintaining custom development work:

- **Hooks**: Hooks are placeholders in the CiviCRM code where you can inject your own custom code. The benefit of hooks is that you are not actually modifying core files—your custom code is maintained separately and is injected into the code in the appropriate place. For more details on using hooks, visit: `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviCRM+hook+specification`.
- **Override Directories:** Override directories are folders located outside of the core files where you can have modified versions of core files. CiviCRM first looks to see if the file exists in the override directory, and if so, uses it. Override directories can be used for both PHP and `.tpl` (template) files. The override directories are configured in: **Administer** | **Configure** | **Global Settings** | **Directories**.
- **extras.css**: The `. . ./civicrm/css/` folder contains all of the `CSS` files used by CiviCRM. The `extras.css` (empty by default) file will override the other `CSS` files, allowing you to maintain style modifications separate from the core file.

Joomla! upgrades

Version and revision upgrades for Joomla! follow the same steps as an initial installation, with the addition of one step – an upgrade of the database to the current CiviCRM version. You must upload the new version to a location on your server (we recommend using the `/tmp/` directory), unpack it, and use the **Install from Directory** option in the **Extensions** | **Install/Uninstall** tool (refer to the Joomla! installation steps above for a more detailed walk-through).

After triggering the installation, you should receive a notification that the database must be updated to the current version. After clicking to upgrade, you should see a successful upgrade message, a link to visit the CiviCRM dashboard page where the menu will be rebuilt, and possibly a message about any configuration changes that could impact your site.

If the upgrade did not complete successfully, you will need to do some troubleshooting to determine the cause.

One possible problem may be restrictive permissioning on your filesystem that prohibited the installation script from overwriting existing files. This is generally easy to notice because the database upgrade script will not report a change from the previous version to the current, and the versioning in the footer region and Joomla! extension manager will not reflect the new version. If this happens, you will need to address the permissioning on your filesystem, or first uninstall CiviCRM and then reinstall it. Note that uninstalling/reinstalling will preserve your data, but you will need to review your configuration settings and must reset any menu items pointing to CiviCRM pages.

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It is also possible that you may run into problems during the database upgrade step. For large databases or lower-end server environments, the script could potentially timeout in the middle of processing, resulting in a half-upgraded database. If this happens, you will need to restore the database from your backup and reinitiate the upgrade. If the problem persists, you may need to manually implement the SQL scripts through PHPMyAdmin or the command line interface. You can find the scripts in the `/civicrm/sql/` folder in the installation package.

If the database upgrade script yields an error with the backtrace logs, it is likely there is a problem with the structure or foreign key relationships in your current database. The backtrace error will provide some guidance as to the source of the problem. You will need to resolve the problem in the current database before retrying the installation process.

If you continue to have trouble with the database upgrade, complete the following steps to ensure the database schema for your current (pre-upgrade) version is structured correctly:

1. Back up the data (only) for your current version of the database. This may require you to re-import the backup you made at the beginning of this process, and then export with just the data (no structure).
2. Create a new, empty database.
3. Import the database structure from your current version of CiviCRM, as found in the installation package. This is found in the location `. . ./civicrm/sql/civicrm.mysql`. Importing this to a clean database ensures you have the correct structure for your current version.
4. Import the data from your current version to this clean database. You should now have your current site's data in a clean structure.

Note that if your site contained custom data, these will be stored in their own tables and not included in the clean structure imported in the previous step. You will need to import the structure and data for custom tables.

5. Now use this new database containing a clean structure and current site data to rerun the upgrade process. That may require dumping the tables in your current live database and replacing them with the tables in this new database.
6. Proceed with the installation and database upgrade.

These steps should ensure that the CiviCRM database upgrade script is working with an accurate structure in your current database.

After completing the upgrade, open your `civicrm.settings.php` file and confirm that the site key value is intact (used for cron jobs, as described above).

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Drupal upgrades

The upgrade process for Drupal requires a number of steps to complete successfully. As in the *Installation in Drupal* subsection of the *Installing CiviCRM* section, we will describe how to upgrade in two ways: with a browser and FTP, and using Drush:

1. Take the site offline by following these steps:
    - Log in as user 1.
    - Go to **Administer** | **Site Configuration** | **Site Maintenance**.
    - Click on **Off-line**. Review and edit the **Site off-line message** as appropriate.
    - Click on **Save configuration**.
2. If your home page is a CiviCRM page:
    - Click on **Administer** | **Site Configuration** | **Site Information**.
    - Note the **Default front page**, so that it can be restored later in the upgrade, perhaps by taking a screenshot.
    - Change the **Default front page** to **node**.
    - Click **Save configuration**.
3. If you are using any CiviCRM integration or extension modules:
    - Click on **Administer** | **Site Building** | **Modules**.
    - Note the integration or extension modules being used, perhaps by taking a screenshot.
    - Uncheck the **Enabled?** box for all relevant modules (for example, **CiviMember Roles Sync**).
    - Click on **Save configuration**.
4. List and take note of the command-line scripts that are currently enabled:

```
$ ls /path_to_docroot/sites/all/modules/civicrm/bin/*.php > /path_
to_safe_dir/SavedListOfEnableScripts.txt
```

5. Download the new CiviCRM files:
    - You can use a browser to download the files from `http://sourceforge.net/project/showfiles.php?group_id=177914`, and then use SFTP or FTP to upload to `/path_to_docroot/sites/all/modules` on the server.
    - Alternatively, use a browser to download the files from `http://sourceforge.net/project/showfiles.php?group_id=177914` to find the name of the current version, and then execute the following on a command line:

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```
$ wget -O /path_to_docroot/sites/all/modules/civicrm.tar.
gz http://sourceforge.net/projects/civicrm/files/civicrm-
stable/3.2.0/civicrm-3.2.0-drupal.tar.gz/download
```

6. Using Drush:

```
$ cd /path_to_docroot/
$ drush civicrm-upgrade --tarfile=sites/all/modules/civicrm-3.2.0-
drupal.tar.gz
```

7. Using the non-Drush method:
   - Back up your CiviCRM and Drupal databases.
   - For example, from a command line,

     ```
     $ mysqldump -uCivicrmDbUser -pCivicrmDbPassword -h localhost
     --databases yourDomain_dru yourDomain_civ > yourDomain.
     backup.mysql
     ```

   - Backup your CiviCRM files:
   - For example, from a command line,

     ```
     $ cd /path_to_docroot/sites/; tar -czf civicrm.files.old.tgz
     all/modules/civicrm yourDomain/files/civicrm
     ```

   - Delete the CiviCRM core files:

     ```
     $ cd all/modules
     $ rm -rf civicrm
     ```

8. Untar the files by replacing `3.2.0` with the appropriate filename from above:

```
$ tar –xzf civicrm-3.2.0-drupal.tar.gz
```

9. Verify that the permissions are still correct for the files directory in either the default or `yourDomain.org` site directories as appropriate:

```
$ chmod -R 777 /path_to_docroot/sites/yourDomain.org/files
```

10. Run the upgrade through the browser as follows:
    - Log in as an administrator to your site:
    - Navigate to `http://yourDomain.org/civicrm/upgrade?reset=1` if clean URLs are enabled, or navigate to `http://yourDomain.org/?q=civicrm/upgrade&reset=1 if clean URLs are not enabled.`
    - Click on **Upgrade Now**.
    - If there are any problems, go to the appropriate CiviCRM forum for help: `http://forum.civicrm.org/index.php/board,8.0.html`.
    - If there are no problems, click on **Return to CiviCRM home page** to rebuild CiviCRM menus and go to the dashboard.

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11. Re-enable CiviCRM integration and extension modules:
    - Click **Administer** | **Site Building** | **Modules**.
    - Check **Enabled** beside the appropriate integration and extension modules that you noted as you disabled them previously.
    - Click **Save configuration**.
    - If you have re-enabled Views integration:

    Click on **Administer** | **Site Building** | **Views** | **Tools**.

    Click on **Clear Views' cache** button.
12. Restore CiviCRM as the home page, if appropriate:
    - Click on **Administer** | **Site Configuration** | **Site Information**.
    - In the **Default front page**, change the value to what was saved for this value earlier in the upgrade.
13. Put the site back into production:
    - Click on **Administer** | **Site Configuration** | **Site Maintenance**
    - Check **Online**
    - Click on **Save configuration**
14. Review the CiviCRM functionality to ensure that it is working properly.
15. Re-enable the scripts that you had previously used and saved in the upgrade process:

    ```
    $ cd /path_to_docroot/sites/all/modules/civicrm/bin
    $ cat /path_to_safe_dir/SavedListOfEnableScripts.txt
    ```

16. For each of the script file listed, run a command along the following lines to remove the `.txt` extension in order to re-enable the script:

    ```
    $ mv scriptName.php.txt scriptName.php
    ```

17. If you are having difficulties, review the troubleshooting suggestions at `http://wiki.civicrm.org/confluence/display/CRMDOC/Upgrade+Drupal+Sites+to+3.2#UpgradeDrupalSitesto3.2-UpgradeTroubleshooting`. If you are still having trouble, visit the CiviCRM upgrade forum at `http://forum.civicrm.org/index.php/board,8.0.html`.

After you have finished your upgrade, you should consider whether you need to enable any new components or configure any new CiviCRM permissions.

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Moving an installation to a new server

If you are planning to move your website to a new hosting environment or from a development server to a live server, you will need to follow several steps in order to ensure that CiviCRM is configured properly in the new environment. The following content represents the key issues to consider and address when moving your site; a full discussion of steps to move a site can be found online: `http://wiki.civicrm.org/confluence/display/CRMDOC/Moving+an+Existing+Installation+to+a+New+Server+or+Location`.

After transferring your site's files and database to the new location, you must update several files to reflect the changes. CiviCRM references the root directory for your files and the full URL for the site in several locations. Follow these steps:

1. Modify `civicrm.settings.php` with the new directory and URL locations. In Drupal installations, this is most often found at `/sites/default/civicrm.settings.php`. Joomla! maintains two versions of this file, both of which must be updated (and which have slightly different references). You can find them at: `/administrator/components/com_civicrm/civicrm.settings.php` and `/components/com_civicrm/civicrm_settings.php`.
2. Delete the cached template files which will be found at:
    - Drupal: `<drupal-root>/sites/default/files/civicrm/templates_c/*`
    - Joomla!:`<joomla-root>/media/civicrm/templates_c/*`
3. Log in to your site as an administrator and reset the base URL and resource directory configured in your system. For Drupal installations, browse to `http://<drupal_site>/index.php?q=civicrm/admin/setting/updateConfigBackend&reset=1`. For Joomla! installations, browse to `http://<joomla_site>/administrator/index2.php?option=com_civicrm&task=civicrm/admin/setting/updateConfigBackend&reset=1`.
4. Joomla! installations must also manually alter `/administrator/components/com_civicrm/civicrm/civicrm.config.php` to correctly reference the location of `civicrm.settings.php` in the `administrator` folder.
5. Rebuild the CiviCRM menus, which may include full URLs and must now reflect the new location:
    - Drupal: `http://<drupal_site>/index.php?q=civicrm/menu/rebuild&reset=1`
    - Joomla!: `http://<joomla_site>/administrator/index2.php?option=com_civicrm&task=civicrm/menu/rebuild&reset=1`

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6. If any of the resources in your site reference the full URL or file location, you may need to update these (for example, if your Drupal navigation menu has links to profiles).
7. If you are using override directories (`PHP` or `.tpl`), you will need to reset them to reflect the new file location. Go to **Administer CiviCRM | Configure | Global Settings | Directories**. Also visit the **Resource URLs** configuration page to confirm that the values are set correctly.

After completing the move, be sure to test the site! Click through CiviCRM and confirm that the pages load as expected, and the URL remains on your new site (if any outdated links exist, it may send you to your old domain or subdirectory).

System maintenance

As with any database system, there will be ongoing maintenance steps that should be performed on a periodic basis. Our focus in this section will be on basic maintenance steps specific to CiviCRM. It is outside the scope of this chapter to address the broader topic of server and MySQL database maintenance. Depending on the size of your database and whether you are using a managed hosting service, you should be aware of basic maintenance steps with your database and hosting environment. Also, we will not address scalability-related issues and maintenance. However, as your system grows, you should be aware of the impact on your MySQL database performance and size.

The most important maintenance step with your system is to keep it updated to the latest revision, and not fall too far behind in major version upgrades. As the steps for doing that have been addressed earlier in this chapter, we won't go into detail here; we repeat it only because of its importance:

- Revision releases may contain security-related patches which are critical for maintaining a secure and safe database.
- Revision releases may contain bug-fix patches which are critical for maintaining a stable and fully operational system.
- Major version releases contain new features and functionality. If the new features are not something you will need or use, you may decide not to upgrade when it is first released. That's fine, and certainly not uncommon. But the core development team will only actively develop and patch the current stable version, which means there may be security or bug issues found in older versions which are not addressed. As a general rule, you should avoid falling too far behind in the upgrade cycle for major revisions. Besides, there's lots of great functionality available in the new releases you'll want to benefit from!

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Another important periodic maintenance step is dealing with duplicate contact records that have a sinister way of creeping into your system. This is particularly true if you have multiple forms collecting information from your public website such as event registrations and contribution forms.

Duplicate records usually result from existing contacts completing online forms using an alternative e-mail address or nickname. As a result of the alternate data, the record does not match the existing record, thus causing a duplicate.

Fortunately, CiviCRM has some excellent tools for deduping and merging your database, found under **Contacts | Find and Merge Duplicate Contacts**. The full range of these tools is detailed later in this book. For the purpose of maintenance considerations, you should schedule periodic deduplication of your entire database. Size and usage of your system will determine how frequently that maintenance should take place. After implementing your system, schedule an initial de-dupe/merge for one month from the go-live date. Depending on how many potential duplicates your dedupe rules uncover, you can schedule the next maintenance review accordingly.

New functionality for the dedupe/merge tools are currently in development which include performance improvements, whitelist management, and automated processing (running a dedupe rule and auto-merging across your entire database). Follow the CiviCRM blog and release notes for more information.

When covering the initial system configuration, we walked through the creation of cron jobs on your server to trigger automated events and actions. In most cases, these will continue to operate without the need for any intervention or maintenance. However, it is a good idea to periodically check in order to ensure that they are, in fact, running properly and the scripts are completing. While creating the cron job, you may choose to have a log sent to an e-mail address. The log does not contain much by way of detail, but will provide a verification that the script has completed successfully. You should make a habit of periodically checking the configured e-mail to confirm that your scripts are running properly.

These basic maintenance steps should be all you need to keep your system running smoothly.

Developing a backup policy and procedure

No chapter on maintenance would be complete without bringing up the topic of backup policies and procedures.

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Regardless of where and how your contact database is being handled, it is pretty safe to say that the data stored in it is critical to the overall success of your organization and should be backed up regularly.

That consideration does not change just because your contact database now resides online. While you may have previously been content relying on the standard backup policies of your hosting provider for your website, the inclusion of CiviCRM as part of your website should now warrant a more robust plan and additional backup mechanisms to ensure your data is preserved and protected.

It is impossible to create a universal backup policy for all organizations. The traffic and usage of the system, nature of the organization, type of data you are maintaining, level of risk exposure, and other factors will all dictate what type of policy you should put in place. If you are uncertain what you should do, consider hiring an outside consultant to do a system and organization analysis for the purpose of developing a backup policy and procedure statement.

However, there are some universal rules and principles to consider:

- **Don't rely on your hosting provider as your sole backup solution**: Consider them a backup of the backup—should your own systems fail, they may be able to pull a recent backup and restore it. There are many reasons why you should not rely on them, but it all boils down to a lack of control. You don't have control over how they back up the database and files, when they do it, how frequently they do it, how long they keep the backup sets, how quickly they can provide you the files or restore it for you, or even if they decide to suddenly change their own policies without warning. Bottom line: Let the hosting providers perform their promised backups, but consider them your last line of defense.
- **Create a formal policy and procedure statement**: Yes, that's the main thrust of this section, and so it may sound repetitive. However, the point is to be intentional about creating a formal policy. This is important enough to go beyond a casual conversation with someone in the weekly staff meeting.
- **Backups should be automated**: Asking Jeff, the accidental in-house IT guy (who also wears six other hats), to run a backup every three days, is not a good policy. You need to know that the backup is happening without the need for human intervention.
- **Periodically check your automated backups and verify their integrity**: Nothing hurts worse than relying on, but never testing, your automated backup system. Suddenly, the server goes down and you discover that the `.tar` package is corrupt. Take the time to periodically unpack the backup, review the files, and actually import the database dump into an empty database to make sure it is complete and functional.

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- **In general, the database backup is far more important than the filesystem**: Why? All your data, which is likely to be changing and worked on daily, is stored in the database. Your filesystem, primarily the application code, rarely changes. Understand that this is a general statement. If your website and CiviCRM makes regular use of the file upload tools, you will want to ensure those are backed up regularly as well. This statement is not to say that you shouldn't have a policy for backing up the filesystem; we are simply suggesting that you may not need the filesystem backed up as frequently as the database is.
- **Back up to multiple locations**: Just as you don't want to rely on your hosting provider as the sole backup solution, you don't want to trust your office intranet or hosting server as the sole repository for backups. Wherever possible, create a system that will maintain regular backups in at least two locations.

Use these basic rules and invest your time and resources to ensure that your data is preserved in the case of accidental loss.

Both Joomla! and Drupal have several extensions that will generate a periodic database dump, save it to the server, and send the compressed file as an attachment to a configured e-mail address. For smaller CiviCRM implementations, this provides an easy way to automatically generate a backup and send it "off-site" via e-mail. Consider creating a Gmail account (which provides ample storage space) to catch and store the backup. While you should periodically download backups to your local server or other off-site space, this can provide an inexpensive and easy-to-implement backup plan. One caveat to this solution is that you may not be able to e-mail an encrypted version of the database, which means you have a certain level of exposure. This should be considered and factored into your overall policy and procedure. A few available extensions are:

- Drupal (db): Backup and migrate module: `http://drupal.org/project/backup_migrate`
- Drupal (files): Backup and migrate files module: `http://drupal.org/project/backup_migrate_files`
- Joomla! (db and files): Akeeba backup: `http://extensions.joomla.org/extensions/access-a-security/site-security/backup/1606`

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Summary

In this chapter, we walked through installation of CiviCRM in Joomla! and Drupal, discussed the upgrade process and development cycle, completed an initial configuration of the system, and reviewed basic maintenance steps to keep your system running smoothly.

By now, you should have CiviCRM installed, configured, and ready to begin working with.

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4

CiviCRM Basics: Moving through the System and Working with Contacts

At this point, you will have worked through the important steps of analyzing your organization's structure and processes as they relate to constituent management. You will also have installed and configured CiviCRM in your preferred CMS environment. In addition, you have been introduced to the case study that will be used throughout this book. It is now time to gain familiarity with the CiviCRM interface and begin working with the contact records.

Whether you are already in the process of implementing CiviCRM, simply seeking to learn more about the software, or seeking a more in-depth understanding of the tools it provides, you are ultimately here because you represent some type of organization with constituents. Those constituents may be members, volunteers, donors, event participants, or just people and organizations you come in contact with. However, at the core of your purpose and the heart of CiviCRM are contacts with which you interact and record information.

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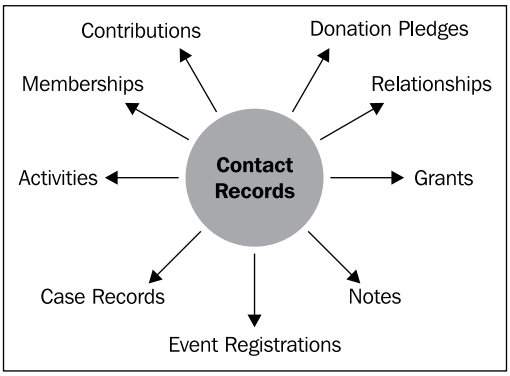
The contact record forms the central hub from which all related records are generated. You will collect, retrieve, and report on these related records in various ways, but ultimately, they all connect back to a contact.



In this chapter, we will do the following:

- Become familiar with the CiviCRM interface and navigation tools
- Discover the contact record, understand how to work with contact data, and begin to organize and categorize our records
- Learn about the powerful search functions available
- Take action on multiple contacts from search results
- Review alternate workflow options and perform maintenance on records

Introduction to the interface

Before we dig into the contact record, let's briefly review the CiviCRM interface. Navigate to your own installation of CiviCRM in Drupal or Joomla!, or use the online demos available at `demo.civicrm.org`, and begin exploring.

The CiviCRM interface consists of three primary regions, namely the horizontal navigation menu, the left sidebar, and the main content region. Depending on whether you are using Drupal or Joomla!, these three regions will look slightly different, though they are fundamentally the same and provide identical functionality.

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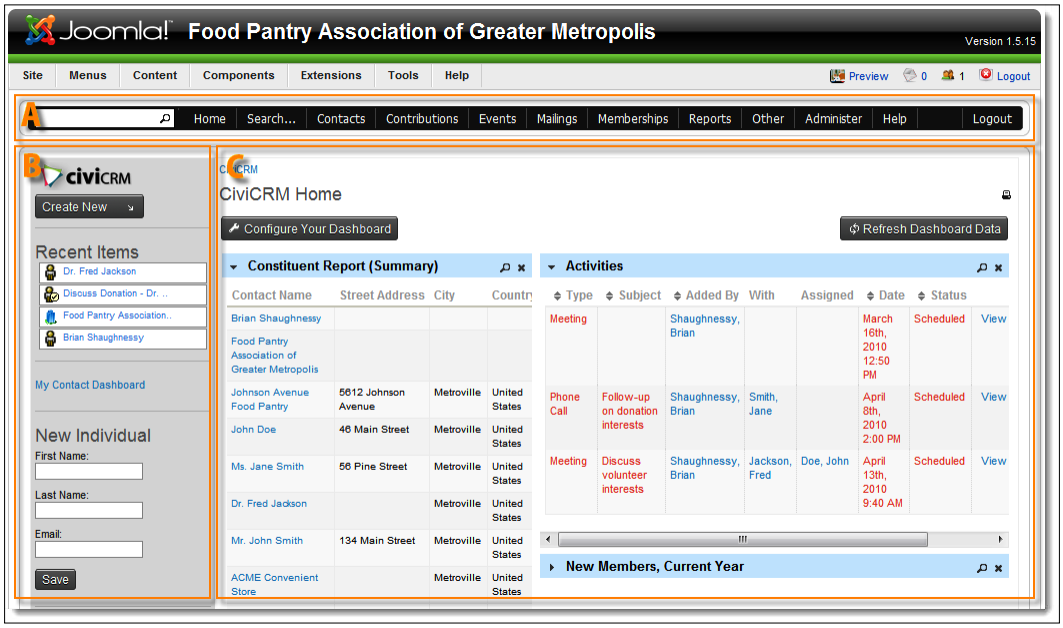
The screenshots in this chapter are taken from a Joomla! installation. Drupal users may note the following differences:

- The horizontal navigation menu will be located at the top of the screen, replacing the standard Drupal admin menu bar (unless your installation has moved it from this default screen location).
- The left sidebar consists of configurable blocks. Depending on your settings, you may not see all of the blocks present in the Joomla! screenshots.
- Joomla! has a consistent administrative interface, whereas the Drupal interface inherits the website theme by default. Consequently, the colors, fonts, width, and other design and layout elements in your installation will reflect your Drupal theme.

If you want to have a different theme for your administrative interface, you can select one for the Drupal admin area using the Administration theme module (`http://drupal.org/project/admin_theme`) and for the CiviCRM admin area using the CiviCRM Theme module (`http://drupal.org/project/civicrm_theme`).



The horizontal navigation bar (labeled **A** in the screenshot) is configurable (from **Administer** | **Customize** | **Navigation Menu**) and will reflect which CiviCRM components you have enabled. The leftmost part of the bar contains a quick search box that will populate record selections as you begin typing. Depending on your configuration settings, it may search on names, nicknames, or e-mail.

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Drupal Users

In order to change the CiviCRM navigation bar back to Drupal's admin menu, click on **Home** | **Drupal Menu**.

The left sidebar (labeled as **B**) will include a drop-down list to create new records, a list of recent items you've visited, your contact dashboard link, and a short form for creating a new individual record. For those using Drupal, these configurable blocks can be accessed through the Drupal **Administer** menu. The main contact region (labeled as **C**) is where all the action takes place as you navigate through the system.

If you're new to CiviCRM, take time to explore the navigation menu and familiarize yourself with the options available. You'll quickly see that this software is loaded with features. The quicker you become familiar with the terminology and tools, the more you'll be able to take advantage of the powerful functionality it offers.

Contacts

Simply put, a contact is any entity you interact with. It may be people, businesses, government institutions, households, organization chapters, regional districts, or anyone else you are collecting data for in your system.

Individuals, organizations, and households

Since all contact entities are not the same and the nature of how you interact with them will be different from one to the other, CiviCRM segments contacts into three main types, with the option of further segmenting them into subtypes:

- **Individual contacts**: These contacts represent people. As you work with the contact record, you will record things like first name, last name, date of birth, gender, and other types of data that is relevant only for interaction with people. In addition, individuals are the only contact type that may have a corresponding user account within your Joomla! or Drupal website; after all, "businesses" don't log in to websites, people who *work* for the business do. CiviCRM provides tools to allow sufficiently permissioned individuals to act on an organization record they are connected with, which we will discuss later. However, it's important to understand this unique aspect of the individual contact type.
- **Organization contacts**: These may represent a non-profit, business, community organization, regional chapter of your organization, or any other "organized" entity. While working with organizations, you are recording the organization name, legal name, and other such data unique to this type.

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- **Household contacts**: These contacts are perhaps the most obscure, as they are intended to provide the ability to group individual records together under a single umbrella and track information that may apply to the group as a whole. The clearest benefit of this type is the ability to share a single address with multiple individuals. For example, if the contacts move, the shared address needs to be updated only once. If a married couple, along with their three children, are tracked in your system, you will want to create a household record with their home address. Also, each of the family member's individual contact record will indicate that they are sharing the household address. In addition to reducing how many times you fill out the address fields and limiting the potential for typographical errors, you also will have the ability to combine the individuals under a single household record when you print mailing labels or export the list. This can be a significant cost saving as you reduce the number of mailing pieces to be delivered from five to one, as seen in the preceding example.

Contact subtypes

In most cases, the three main contact types we just described are sufficient for organizational needs. When you need to collect and store different information about subgroups within these types or define relationships specific to a subgroup, you may consider further segmenting your record types into contact subtypes. Each subtype inherits its basic "entity identity" from one of the three main types, but otherwise, it can be treated as unique.

The Food Pantry Association of Greater Metropolis (FPAGM) provides services and support for food pantries within the city of Metropolis and the surrounding area. On a daily basis, they interact with 30 to 40 food pantries that are members of the organization. In addition, they interact with restaurants, grocery stores, and convenience stores that donate food from their surplus for distribution to the food pantries.

It is clear that the food pantries and businesses donating food are distinctly different entities. The nature of the data they collect, interaction through mail and e-mail, and types of reports that will be run will be different, depending on whether the organization is a pantry or food supplier. Consequently, FPAGM has decided to create two contact subtypes under the main organization type.

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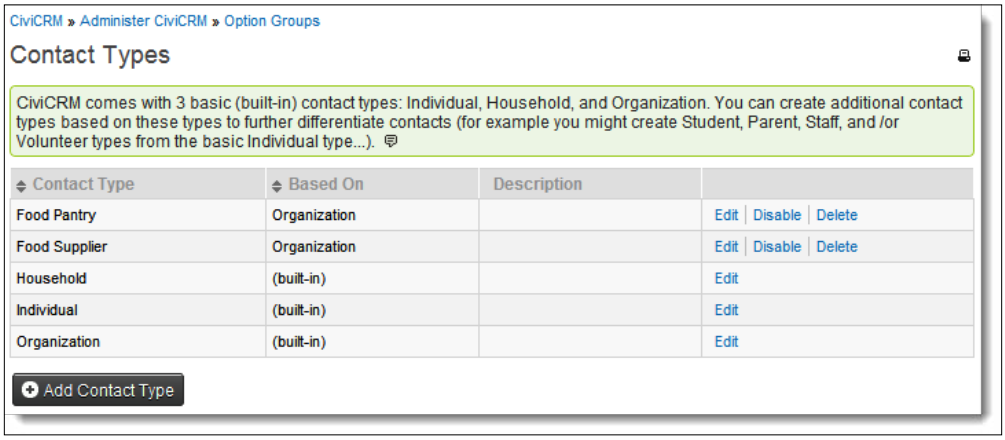
Contact subtypes are created and managed through: **Administer** | **Option Lists** | **Contact Types**. From this screen, as seen in the following screenshot, you can rename the existing types (including the three primary types), create new types, and assign icons to each type in order to help visually distinguish them while reviewing the records.



Planning your contact types

It is important to give a careful thought as to how you work with different types of contacts when you configure and build out your CiviCRM implementation. Contact types may be viewed as the highest level of categorization in your system and the choices you make will have implications throughout the rest of the system.

Consider the following as you plan your contact types:

- Don't overuse contact subtypes. There will be a plenty of other ways to categorize and segment your records. The subtypes are best used when you have distinct differences between contacts that strike at the core nature and role of the entity.
- Contacts can be assigned only a single contact type; don't create a structure where there may be confusion or overlap between subtypes. In the food pantry example, you would not want to create subtypes for food supplier, grocery store, and convenient store because the grocery store and convenient store are both food suppliers, and having those three subtypes will create uncertainty about where a certain business best fits. It would be better to create a single subtype for food supplier and use other means (such as tags or a custom field) to further categorize within that one type of entity.

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- If you are planning to migrate data from an existing database, be sure you take the time to organize your existing records into the types and subtypes you plan to use in CiviCRM. The contact import tools provided by CiviCRM require you to import a single contact type at a time. You will want to make sure you've settled on your contact structure and prepared your import data accordingly before you begin importing.
- One of the primary benefits of contact subtypes is the ability to create sets of custom data fields for one or more types. The custom data fields are those fields which you create to extend the core fields supplied by CiviCRM out of the box. This is a useful way to think through the planning process: Do I plan to collect data for this one type of organization that I don't need or clearly does not apply to another type? If so, it may warrant creating a subtype.

You assign contact subtypes when you create contact records. If an existing contact does not have a subtype selected, you may specify one when editing. However, if you've selected a subtype and stored any custom data associated with that type, you will no longer be able to change the subtype (unless all custom field sets for that subtype have been permanently deleted). For example, FPAGM creates a custom data field to track the daily average of the number of clients a food pantry services. This field is attached to the Food Pantry subtype, as it is only relevant to those contacts. If we create a new organization record, assign the Food Pantry subtype to it, and save the organization contact, the record is now locked on that subtype; we cannot decide to change the record to the Food Supplier subtype at a later date. This system behavior ensures protection against unintended data loss or orphaned data. If at a later time you decide to completely delete the custom data fields associated with the subtype, you will once again be able to reassign a contact to a different subtype. Basically, CiviCRM locks the subtype in order to prevent data loss—if there is no subtype-specific data stored for a record, you can change the value without risk.

While we are discussing contact types, there is another important consideration to think through, particularly if you have a complex organization with multiple administrative users who will be working with CiviCRM.

As we will see shortly, a large part of working with CiviCRM involves connecting related records with the contact record. For example, you may track phone calls and meetings held with an individual, donations contributed by a business, membership from a household, or open a case for any of these contacts. Very often, there are connections built between related contacts and in each instance, you must decide where the contribution, membership, or other records should be attached.

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John Smith, the proprietor of ACME Convenient Store, calls FPAGM to arrange the donation of 50 lbs. of bread for distribution to food pantries. FPAGM staff will track this as an in-kind donation in CiviCRM. The question asked is should the contribution be recorded with John Smith (after all, he is the owner and primary contact), or with ACME Convenient Store?

In most cases, it is very clear where the associated record should be attached. However, where there is potential for confusion and ambiguity, you will want to establish clear policies and procedures to help staff determine the proper location for the data.

Consider the following questions:

- Where is the official "source" of the data? If you receive similar data in the future, where will it be tracked? In the preceding example, we would record the donation with the organization (ACME Convenient Store), not with John Smith. It is really the business that is contributing, not the individual.
- Who is actually involved in the activity? For example, who will be attending the event, or whom will the official tax receipt be made out to? One common area of confusion is an organization that hosts trade shows as part of a conference. Are your exhibitors the businesses themselves or the individuals representing the business? This can be tricky, because "businesses" don't attend events, people do, and yet a good argument could be made for recording the exhibit-related details with the organization record.

Regardless of how you resolve those potential areas of confusion, it is important to strive for consistency. How you enter your data will have a direct impact on what you are able to pull from the system.

Once you've defined your contact subtypes (if any) and thought through the policies you will put in place for the staff, take the time to manually create a few records with real data to test your structure and policies. This may help you identify and correct any unanticipated consequences of your configurations.

Core information fields

Let's get into a contact record and begin to see how this idea of a contact with related records takes shape in CiviCRM. If this is your first time in CiviCRM, place your cursor in the search box to the left of the CiviCRM menu bar, as seen in the following screenshot, and then click on **Enter** to view all the records:

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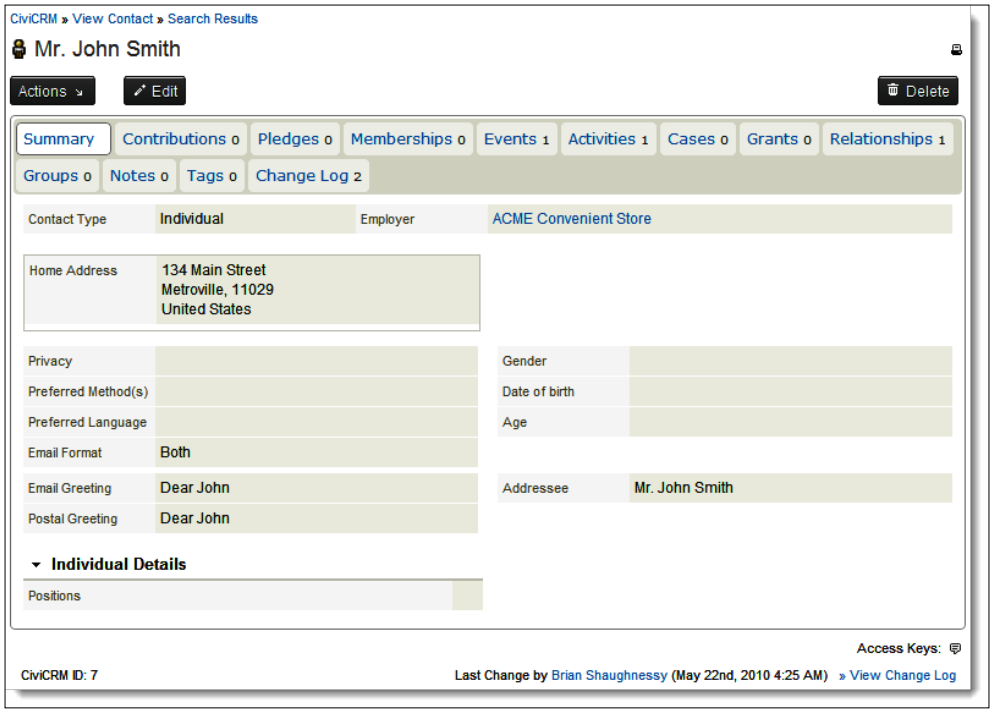
At a minimum, you should see one record corresponding to your website user account (you may also have seen that record in the left sidebar recent items list). Enter this record, or any other one, to view the contact details.

As you can see, the contact record is displayed through a series of tabs corresponding to the different types of data you may be collecting.

The tabs displayed in a contact record depend on configuration settings in two places: **Enable Components** (**Administer** | **Configure** | **Global Settings** | **Enable CiviCRM Components**) and **Site Preferences** (**Administer** | **Configure** | **Global Settings** | **Site Preferences**). If you do not see an expected tab, make sure that the component is enabled, and that you have indicated that it should be viewable on the contact record page.



We will not discuss all of the available tabs at this point, but only cover those that are directly related to the contact record itself, including communication tracking, relationships/connections with other records, and core categorization tools.

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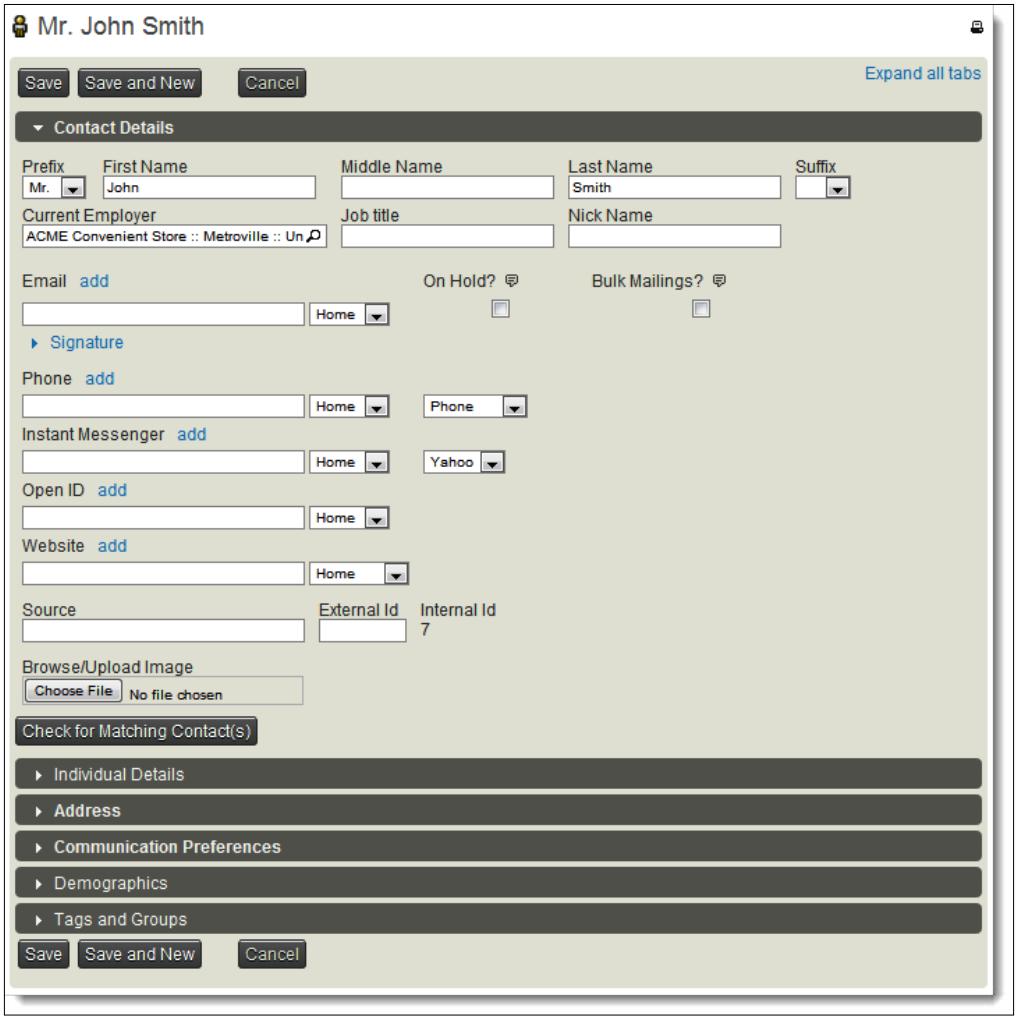
The default summary tab is perhaps the most important tab, as it tracks the contact name, communication details and preferences, addresses, and demographics (if it is an individual contact type). Click on the **Edit** button at the top of the tab to view all the available fields for your contact. You will notice that the edit screen is broken into grouped panes of fields corresponding to the different types of information you are collecting.



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Contact details

The contact details pane contains basic information about an entity, including the following:

- Contact name, including the nickname, which may be useful as an alternative value for searching. For example, if the name of a certain not-for-profit organization in your database typically goes by an acronym, you may wish to spell out the full name for formal purposes and place the acronym in the **Nick Name** field. It can then be easily exported with the record and found when using the search bar.
- Notice that if any contact subtypes have been configured, they will be available for selection in this area (**Contact Type** drop-down). Once you've selected a subtype and saved data to any of the custom fields associated with the subtype, the ability to change the type will be locked. Only those subtypes corresponding to the primary type are listed. For example, if you are looking at an individual record, only the individual subtypes will be available.
- Individual records have a special **Current Employer** field that creates a relationship between the individual and organization with whom they are employed. The current employer field is displayed prominently in the contact summary tab and can easily be exported with the individual record. Note that if you enter the name of an organization that does not exist in this field, an organization contact record will be created. You can take advantage of this to reduce the data entry.
- Communication options include e-mail, phone, instant messenger, website, and Open ID. Each of these fields allows you to add multiple values and categorize them. For example, a person may have a phone and mobile number for *home*, and a phone, mobile, and a fax number for *work*. Alternatively, someone may have a work e-mail and personal e-mail recorded with their record. If your site does not require tracking Open ID, you may remove it from the interface through **Administer** | **Configure** | **Global Settings** | **Site Preferences**.
- If multiple communication values are entered, one of them will be marked as the primary one. The primary value can be more easily exported, regardless of its type. For example, some of your contacts may wish to have their home phone marked as primary, while the others prefer their work or mobile to be marked as such. The primary flag is not concerned with the source or type of the record; it simply indicates which their preferred option is.

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- The e-mail field has two additional checkboxes unique to its function—**On Hold** and **Bulk Mailings**. An e-mail address marked as **On Hold** indicates that it may be a faulty address. While you can manually mark an address as such, it is more likely that the field was flagged this way as a result of the CiviMail return mail processor. The mail processor is an optional tool that can be set up to retrieve any bounced (returned as undeliverable) e-mails and flag them as **On Hold**. This provides you with an opportunity to review the records and determine the source of the problem. While they are tagged as **On Hold**, they will be excluded from any future CiviMail mailings. The bulk mailings flag designates one e-mail address as the preferred mailing address for any bulk e-mails generated through CiviMail. For example, a person may want their work e-mail designated as the primary address as they want to receive direct communication immediately. However, weekly e-mail newsletters generated to all members of your organization should be sent to the person's home e-mail so as not to clutter their work inbox.
- The source field may be used to record how this particular contact came to be involved in your organization, or how they were added to the system. This may be particularly useful if your organization's growth is primarily due to word-of-mouth networking. For example, you might record that Jane Doe was introduced to the organization through outreach from one of your board members.
- External ID records a unique ID from some external source. If you are importing records from another database such as MS Access, you may want to import the key ID field for the contact into this field. While you won't typically use it once you are working exclusively in CiviCRM, it provides a useful way to trace the record back to its original source in the previous database system. This may also be used for data integrity analysis after the initial import process. In larger organizations with more complex IT infrastructure, it may enable easier on-going data synchronization with other software tools.

Custom data

As we'll see in *Chapter 6*, *Communicating Better*, CiviCRM allows you to create sets of custom fields and indicate whether they should be displayed inline or in their own tab on the Contact form. If some custom inline fields have been defined for all contacts or the specific contact type you are editing, these fields will appear directly under the contact details pane.

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Address

Similar to communication options, you may create multiple address sets, categorize them (home, work, and so on), and flag one of them as the primary address. There are a few important things to note:

- An existing address may be flagged as the billing address or you may create a new address and use the **Location Type** option to designate it as a billing address. The former is useful if a single address is used for multiple purposes. The billing address will be used if the contact makes any online credit card payments for donations, events, or membership.
- Individual contacts have the option of choosing a household record's address for an address set. In order to do so, begin typing the household name and select it from the drop-down list. If the household record does not exist, you can create a new one by typing in the desired name of the household record. A contact may have only one associated household address.
- Each record may only have one address set for each address type. In other words, you can't designate three addresses as **Work** in a single contact record. This may seem somewhat limiting, as it would not be uncommon for an individual to have two work locations, or a home and second home address. However, the usefulness of this limitation becomes apparent when you export records, as you have the option of exporting a single address type with the record. Having multiple address sets with the same type would either require duplicate records or duplicate field columns, either of which will be difficult to work with. If you have the need for tracking multiple addresses of a similar type, consider adding option values labeled as **Home1**, **Home2**, **Home3**, and so on (**Administer** | **Option Lists** | **Location Types**).

When you first install CiviCRM, the address pane contains all of the available fields, including some you may not want to display. Visit **Administer** | **Configure** | **Global Settings** | **Address Settings** to turn off elements in this pane. For example, you may only want to track two address lines, and so you would disable **Additional Address 2**. Likewise, it is unlikely that you would need to manually edit the latitude and longitude values for records, as that will typically be handled automatically if you have enabled address geocoding for your site.

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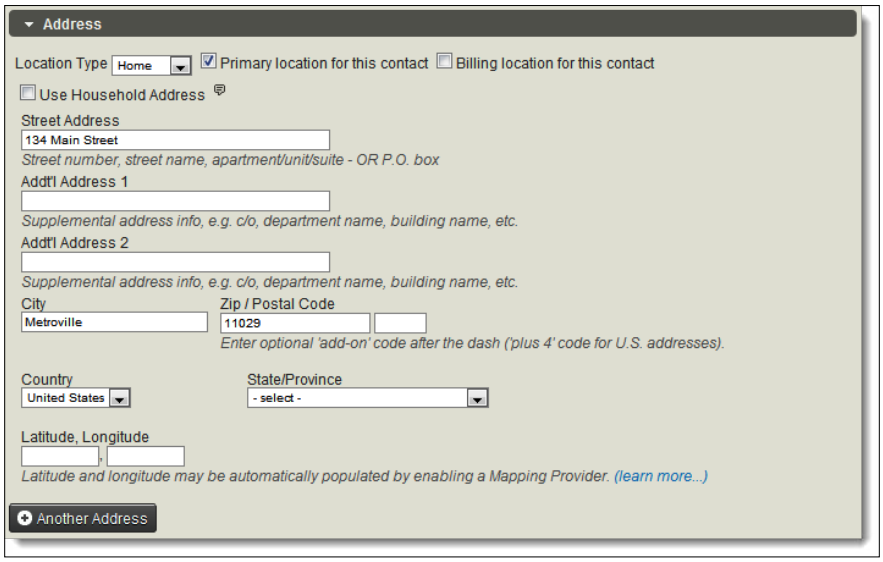
We can see the **Address** pane in the following screenshot:


Address
Location Type Home
Primary location for this contact
Billing location for this contact
Use Household Address
Street Address
134 Main Street
Street number, street name, apartment/unit/suite - OR P.O. box
Addt'l Address 1
Supplemental address info, e.g. c/o, department name, building name, etc.
Addt'l Address 2
Supplemental address info, e.g. c/o, department name, building name, etc.
City
Metroville
Zip / Postal Code
11029
Enter optional 'add-on' code after the dash ('plus 4' code for U.S. addresses).
Country
United States
State/Province
- select -
Latitude, Longitude
Latitude and longitude may be automatically populated by enabling a Mapping Provider. (learn more...)
Another Address

Communication preferences

Now that you have your contact record in place and have recorded all the various ways you might be communicating with them, CiviCRM provides tools for further classifying (and limiting) your communication methods. These preferences are broken into four areas:

- Greeting preferences are used when e-mailing, generating labels, or exporting contacts, and can use fields from the record (tokens) or be fully customized.
- **Privacy** settings reveal if the person prefers not to be contacted through a certain method. The **Privacy** settings do not lock access to the communication details; they are simply a tool allowing CiviCRM users to quickly see that the contact has requested not to be contacted in the selected way. If selected, the privacy settings generate an eye-catching "stop" icon next to the respective method in the **Contact Summary** tab.
- Similarly, the **Preferred Method(s)** are used for your internal purposes in order to facilitate and improve communication with contacts.

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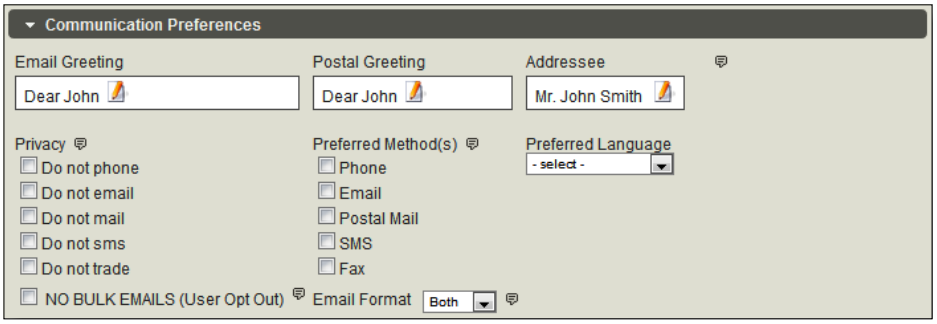
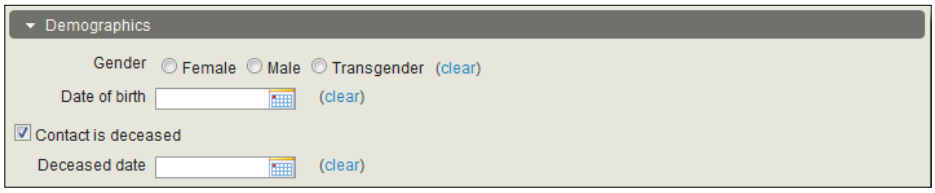
- The e-mail settings provide an opt-out flag and format preference:
    - The opt-out flag (**NO BULK EMAILS (User Opt Out)**) complies with the **CAN-SPAM Act** in the United States and is typically only used if a contact specifically states they do not wish to receive bulk e-mails. Bulk e-mails generated through CiviMail are required to have an opt-out token (either by directing the user to a web-page where they can choose to opt-out, or providing an e-mail address for automated processing). It is likely that you will very rarely select that option through the interface. If you do, be aware that it will automatically remove that user from any e-mails generated from CiviCRM.
    - The **Email Format** field determines whether the user prefers to receive **Text** or **HTML**-based e-mails. The default is **Both**, which means e-mails generated with HTML and text versions will both be sent to the contact. Note that the user's e-mail client settings will determine which one is actually displayed. You may want to periodically monitor this field to determine if users have explicitly requested receiving e-mails via text, as it will require you to generate two forms of e-mails for sending via CiviMail.



Demographics

Individual contact records will have a **Demographics** pane where the **Gender**, **Date of birth**, and **Deceased date** can be recorded. When conducting a search to export contacts for a mailing list, you can exclude contacts of people who are deceased in order to ensure that they don't receive the mailing.



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Deleting contacts

When in the contact summary view, you will notice a **Delete** button above and to the right of the tabbed interface. CiviCRM has a contact trash function; when you click on this button to delete a contact, it does not completely remove it, or any related records from the system, but rather marks it as trashed. Trashed records can be searched for using the **Advanced Search** tool; an option to **Search in Trash (deleted contacts)** is found toward the bottom of the **Basic Criteria** pane. After searching for trashed contacts, you can delete it permanently or restore it.

This functionality is a powerful way to protect your data against inadvertent deletion. However, as with any safety net, you should not over-rely on it. Never trash a record with the intent of later restoring it. Trashed records should be viewed as fully deleted (and will appear as if they were actually deleted by the system when searches and reports are generated).

Note that you may disable the trash function on your system through **Administer** | **Configure** | **Global Settings** | **Miscellaneous**.

Tags and Groups

You may have noticed that we skipped the **Tags and Groups** pane found at the bottom of the contact summary edit screen. These records are also found in their own dedicated tabs on the **View Contact** screen, and so we'll take a look at the functionality they provide in the context of their own tabs.

The **Tags and Groups** tab provides two powerful mechanisms for categorizing and organizing your contacts. However, it is not always readily apparent which of the two mechanisms is best suited for a specific need.

Tags

Tags provide a hierarchal categorization mechanism across all contact types. They are a *categorization* mechanism—you use tags to record information about the nature of your contacts, such as the type of services they provide, skills they have, areas of interest, or other such information. They can be hierarchal; you can build out your tag structure with categories and subcategories. When viewing and selecting tags from the contact summary edit screen, they appear in a simple list with indentations to visualize the hierarchy. Viewing them in the dedicated tab displays a similar structure, but uses an expandable/collapsible tree tool to better reveal the hierarchy and allows you to quickly navigate through the structure.

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Tags are applied across all the contact types, which means that you cannot create sets of tags specific to a single contact type (for example, organizations). Keep this in mind, as you may want to consider other categorization tools such as groups or custom fields, if your available options need to be contact type or subtype-specific. Tags can also be created and applied to contacts, activities, and cases; at the time the tag is created, you choose how the tag will be used.

In addition to the hierarchal tagging structure, CiviCRM provides tools for creating freeform tagsets. This tag feature differs from the hierarchal tree in several ways, as follows:

- The hierarchal tree displays the full list of available options, which you navigate through and select using checkboxes.
- Tags available in the tag tree must be created using the **Manage Tags** tool before you can navigate through and select them in a contact record.
- Tagsets present a single text box which you use to create tags as you assign them to a contact/activity/case, or use to search for existing tags and assign. As you begin typing in a tagset field, CiviCRM will dynamically search for partial matches with the existing tags, which you can then select. If there isn't an existing tag, you will create the new tag on the fly. For example, if I start typing "trans" it may pull up an existing tag called "transit"; if I continue typing "transp", I can proceed to create a new tag called "transportation", and so on.
- Freeform tagset tags can be created and managed using the **Manage Tag** tool as well; you would simply treat the tagset as the parent tag. Typically, you would not use the tag management tool to create new tags for a tagset, as the primary benefit of freeform tags is the ability to dynamically create new tags as you are working in a record. However, you may find it helpful to clean up these tags at times, as they are more susceptible to clutter.
- In general, the hierarchal tags are better at classifying records in a very structured and orderly way, whereas tagsets are useful when you want to quickly and easily list keywords or other flat-list attributes about a record.

As indicated earlier, before using hierarchal tags with your records, you must define them in the system: **Administer | Option Lists | Tags (Categories)**. Use the **New Tag** button to create new tags, and the **Edit/Delete** links to manage your existing tags. Note that while the administrative page lists all the tags alphabetically, the **Parent ID** column will help you track the hierarchy of the structure.

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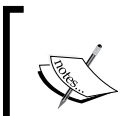
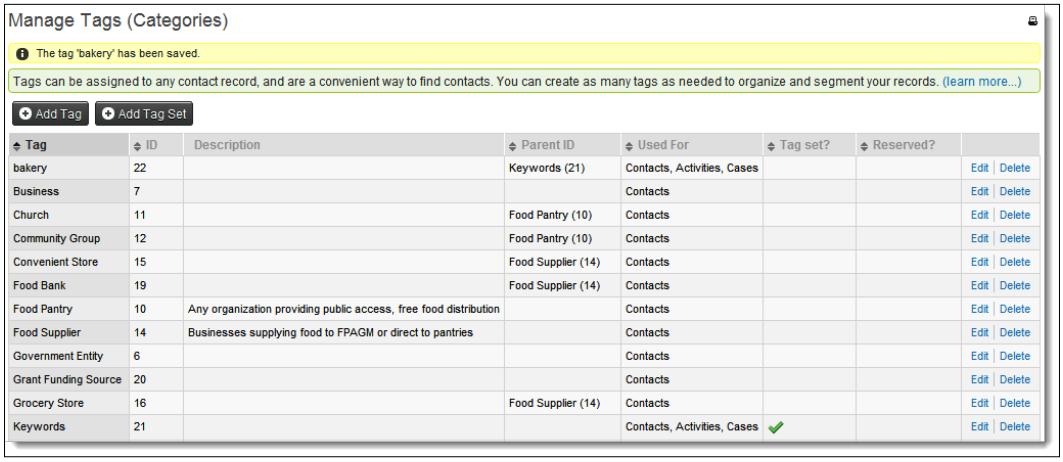


FPAGM uses tags to track the types of services and nature of the contact entity. This includes several subcategories to further refine the information gathered about a contact. They define a single "keywords" tagset to further classify records beyond the hierarchal structure.



Manage Tags (Categories)

The tag 'bakery' has been saved.

Tags can be assigned to any contact record, and are a convenient way to find contacts. You can create as many tags as needed to organize and segment your records. (learn more...)

Add Tag | Add Tag Set

Tag	ID	Description	Parent ID	Used For	Tag set?	Reserved?	
bakery	22		Keywords (21)	Contacts, Activities, Cases			Edit | Delete
Business	7			Contacts			Edit | Delete
Church	11		Food Pantry (10)	Contacts			Edit | Delete
Community Group	12		Food Pantry (10)	Contacts			Edit | Delete
Convenient Store	15		Food Supplier (14)	Contacts			Edit | Delete
Food Bank	19		Food Supplier (14)	Contacts			Edit | Delete
Food Pantry	10	Any organization providing public access, free food distribution		Contacts			Edit | Delete
Food Supplier	14	Businesses supplying food to FPAGM or direct to pantries		Contacts			Edit | Delete
Government Entity	6			Contacts			Edit | Delete
Grant Funding Source	20			Contacts			Edit | Delete
Grocery Store	16		Food Supplier (14)	Contacts			Edit | Delete
Keywords	21			Contacts, Activities, Cases	✓		Edit | Delete

The **Tags** tab in the contact record presents the most user-friendly interface for tag selection. While you may optionally manage a contact's tags using the **Contact Edit** screen, the interface is a bit more limiting because of the other elements on the page. This is especially true if you have a long list of hierarchal tags in your system. The **Tags** tab represents the hierarchal form in a more visually appealing way and allows you to dynamically expand/collapse the parent tags to view the child options.

To help you easily get a glimpse of how a contact has been tagged, CiviCRM provides a comma-separated list of all the selected tags on the **Summary** screen, as shown in the following screenshot:

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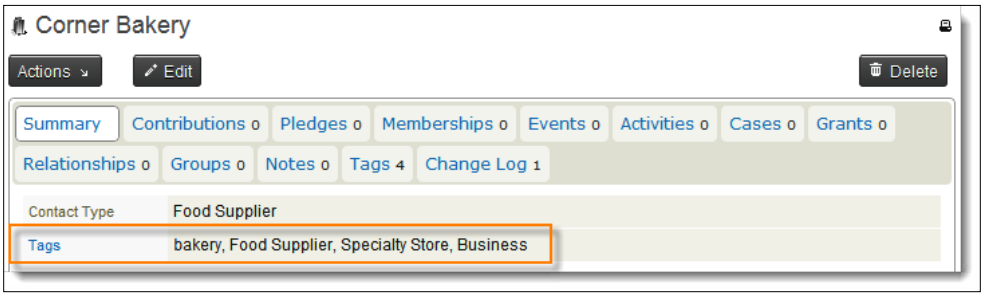

Groups

Groups are simply a collection of records that may be defined statically or dynamically. Static groups are sometimes referred to as regular groups or simply groups, and dynamic criteria-based groups are called smart groups.

Think of a static group as a container in which you manually place your records. There are no specific criteria by which people become part of a static group—they are added or removed based on their or your preference. For example, you might create a "Board of Directors" group and add the nine contacts in your system, who currently are members of the group. Another example of a common use for static groups is opt-in mailing lists. As people visit your website, you might provide the option of signing up to receive a periodic e-mail newsletter. The signup form (and unsubscribe tools) will empower visitors to add or remove themselves from your newsletter group.

In contrast, smart groups are generated based on the criteria you have defined, and thus are dynamic in nature. For example, you may have a group that retrieves all contacts in a certain area where the criteria you've defined is a specific city, state, or zip code proximity range. Smart groups store the criteria and not the static list of contacts at a given point in time, and thus serve as a saved query in your database. If you return at a later date to view the contacts in a smart group, CiviCRM will pull a fresh list of contacts that meet the defined criteria.

Although you typically will create a static group and then add your records to this container, smart groups are generated from search results. After running a search for contacts, you may take certain actions on the results, including saving them to a smart group that can easily and quickly be retrieved at a later date. While retrieving a saved smart group later, you are given an opportunity to adjust the criteria and update the settings. Smart groups also have the flexibility to manually add and remove contacts. Hence, those who may not fit the criteria can be added and others who do can be excluded.

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Using groups

It is great that you have tools to collect and organize your contacts into groups, but how will you actually use them in the system? Here are some of the most common uses for groups:

- Static groups are useful for groups of records you wish to isolate and reuse, but do not meet specific criteria, such as the Board of Directors and mailing list examples. Static groups can also be created when importing records, which may prove a useful way to track the source of your records. For example, if you receive a list of potential donors from a third party organization, you might import them and add them to a group with the organization's name and import date.
- Smart groups will typically be created for saved searches that you conduct on a regular basis. Why go through the process of selecting several criteria options in **Advanced Search** for a set of records you review regularly? Run your search, save the results to a smart group, and any time you need to retrieve the records, you will be pulling an accurate, real-time list of records meeting your defined criteria.
- Drupal and standalone implementations may use groups for **Access Control lists** (**ACL**). CiviCRM provides a number of fine-grained controls to limit who may view, edit, delete, or access certain functions in the system. These are controlled in part through ACL-type groups. Note that ACL capabilities are not yet available to Joomla! implementations due to limitations in the CMS, though this is expected to be developed sometime in the future with the release of Joomla! 1.6.
- When defining a group, you may designate it as a mailing list, which means it will be made available to the broadcast mailing tools in CiviCRM. The bulk mailing process relies heavily on groups to generate the recipient list, providing the ability to include or exclude contacts based on their group status.
- Profiles, which are a collection of fields that can be exposed to your website visitors as search/listing forms, data collection/edit forms, or view-only pages, can restrict the records they display based on group status. For example, you may create a search and listing profile as a membership directory on your website. However, you want to ensure that only members in good standing are part of the search results, so you first create a smart group with the criteria **membership status = current** in order to dynamically retrieve your members. While configuring your profile, you limit the search results to this group and thereby create your online member directory.

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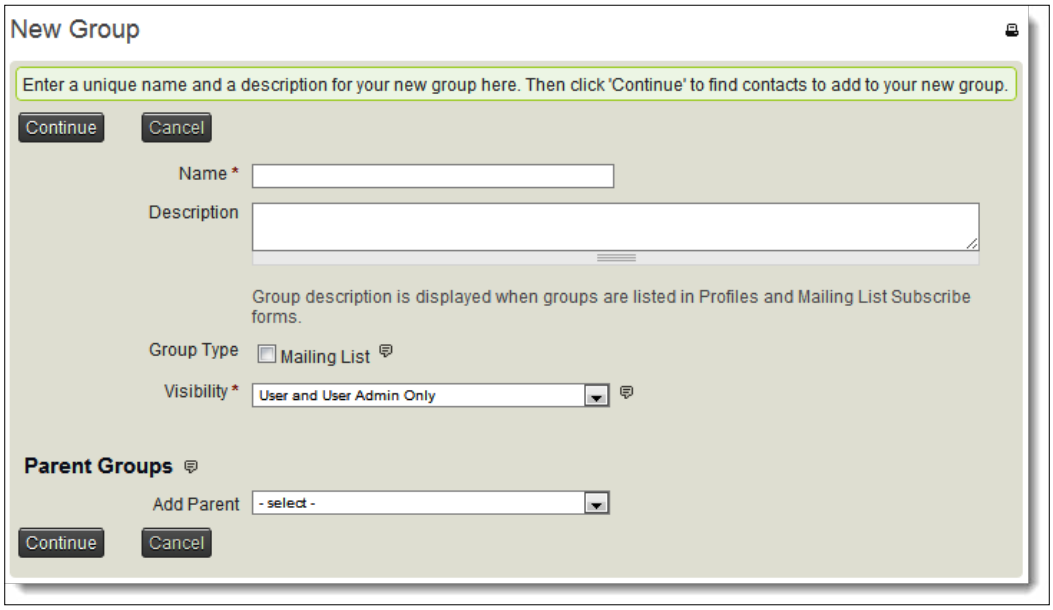
- Profile-create forms (used while collecting information from site visitors) that have the option of adding contacts to a group when the form is submitted. This provides a useful way to track the source of certain data submitted online and facilitate any follow-up process.

Creating groups

Groups are created and managed through **Contacts** | **Manage Groups**. Note that you only *create* static groups through this page, but may *manage* both static groups and smart groups. Since smart groups are criteria-based, they may only be created from search results.

When creating a new static group or editing an existing group, you are presented with the following form:


New Group
Enter a unique name and a description for your new group here. Then click 'Continue' to find contacts to add to your new group.
Continue
Cancel
Name *
Description
Group description is displayed when groups are listed in Profiles and Mailing List Subscribe forms.
Group Type
Mailing List
Visibility *
User and User Admin Only
Parent Groups
Add Parent
- select -
Continue
Cancel

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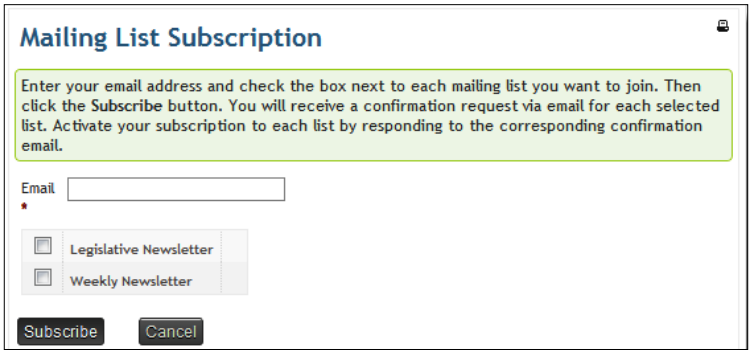
In addition to the group **Name**, **Description**, and **Group Type** options, you'll notice two additional fields we have not yet discussed:

- **Visibility**: This controls whether only administrators can use the group or whether it may be available for public signup forms. For example, if you are using this group for opt-in mailing list signup, you will want to designate it as **Public Pages** visibility. You may then add the **Groups** field to a profile form and allow people to add themselves to the group. It also determines if the mailing list groups appear to non-administrative users on the general mailing list subscription form at `http://yourdomain.org/civicrm/mailing/subscribe?reset=1` (for Drupal), or `http://yourdomain.org/index.php?option=com_civicrm&task=civicrm/mailing/subscribe&reset=1` (for Joomla!). In general, your groups will typically be assigned **User and User Admin Only**, unless you want to make them publicly available.


Mailing List Subscription
Enter your email address and check the box next to each mailing list you want to join. Then click the Subscribe button. You will receive a confirmation request via email for each selected list. Activate your subscription to each list by responding to the corresponding confirmation email.
Email
Legislative Newsletter
Weekly Newsletter
Subscribe
Cancel

- **Add Parent**: Groups may be hierarchal, which means you may create a parent group with a series of subgroups underneath it. Searching for group members in the parent group will include all members of any child groups.

FPAGM initially creates a **Board of Directors** static group and a **Current Members** smart group that retrieves contacts across all three membership categories with a status of new, current, or grace. This allows them to easily access a running list of all current members.

In addition, they create a parent group called **Food Pantry Members** with child groups for each category based on the tag selections. The child groups are smart groups generated from search results, while the parent group serves as a simple container for the three subgroups, as we see in the following screenshot.

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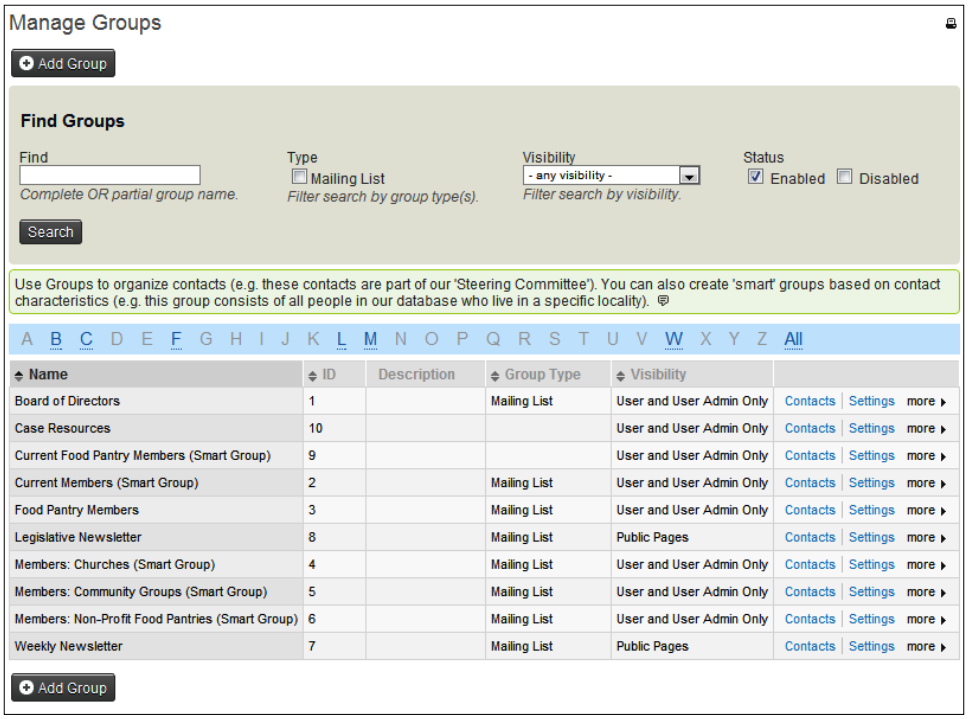
Manage Groups
Add Group
Find Groups
Find
Complete OR partial group name.
Type
Mailing List
Filter search by group type(s).
Visibility
- any visibility -
Filter search by visibility.
Status
Enabled
Disabled
Search
Use Groups to organize contacts (e.g. these contacts are part of our 'Steering Committee'). You can also create 'smart' groups based on contact characteristics (e.g. this group consists of all people in our database who live in a specific locality).
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z All
Name
ID
Description
Group Type
Visibility
Board of Directors 1 Mailing List User and User Admin Only Contacts Settings more
Case Resources 10 User and User Admin Only Contacts Settings more
Current Food Pantry Members (Smart Group) 9 User and User Admin Only Contacts Settings more
Current Members (Smart Group) 2 Mailing List User and User Admin Only Contacts Settings more
Food Pantry Members 3 Mailing List User and User Admin Only Contacts Settings more
Legislative Newsletter 8 Mailing List Public Pages Contacts Settings more
Members: Churches (Smart Group) 4 Mailing List User and User Admin Only Contacts Settings more
Members: Community Groups (Smart Group) 5 Mailing List User and User Admin Only Contacts Settings more
Members: Non-Profit Food Pantries (Smart Group) 6 Mailing List User and User Admin Only Contacts Settings more
Weekly Newsletter 7 Mailing List Public Pages Contacts Settings more
Add Group

The potential capabilities for groups, and in particular, the dynamic nature of smart groups, are virtually endless. With some creativity and planning, you can capture just about any subset of records. For example, the ability to define searches and smart groups based on existing group membership allows you build to complex collections of records using disparate and unrelated record subsets. Consider the following example in which FPAGM wishes to assemble a targeted mailing to potential donors:

- Create a smart group for current supporting members
- Create a smart group for past contributors, who have made a donation larger than $500 sometime over the last three years
- Create and maintain a static group called **Donor Outreach**, in which they manually maintain a list of organizations they are courting for high-end donations
- Create a smart group that collects members of the three groups above, plus the existing Board of Directors group, and is entitled **Potential Major Donors**

This final smart group, which combines records from three very different groups (one based on membership, one based on past contributions, and two that are static groups), now serves as their master list for targeted major donor solicitation.

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Managing group membership

Contacts that are a part of a group are called *members* of the group. Don't confuse this group membership with your organization's membership functions; those are handled elsewhere. Group membership indicates if the contact has been added to or removed from a given group.

You may add or remove contacts to a static group through the contact summary edit form, or on the contact's **Groups** tab. CiviCRM will timestamp the date and time when the record was added or removed. While smart groups are primarily defined by search criteria, you do have the option of overriding the criteria and manually adding or removing members using these tools. Note that the contact's **Groups** tab will only display the static group memberships. The contact may be part of several smart groups by virtue of meeting the search criteria, but those will not be listed on this tab.

Once you've created your static group and added contacts to it, you will want to access it and review the list of members. We do this through the **Contacts | Manage Groups** screen. Find your group and click on **Members** to view the list of contacts.

As noted earlier, there are other ways to automatically add contacts to groups, such as through profile signup forms or during the import process. In addition, you may add or remove contacts from groups after conducting a search using the actions drop-down options.

Relationships

We've already mentioned relationships several times when discussing grouping individuals with a household, and recording the current employer for an individual. We now want to explore the full breadth of options and uses for relationships.

Relationship types

Relationships are used to connect two records to each other. When defining relationships you may limit the types of contacts available to each side of the connection; for example, an employer/employee relationship would only exist between an organization and an individual. Other relationships may be more flexible with no contact type restrictions.

Relationships have labels to help distinguish the nature of the connection from each side of the equation. For example, John Smith may be an **Employee of** ACME Convenient Store and ACME Convenient Store would be the **Employer of** John Smith. Some relationships do not distinguish differences in each side of the connection, such as **Spouse of**.

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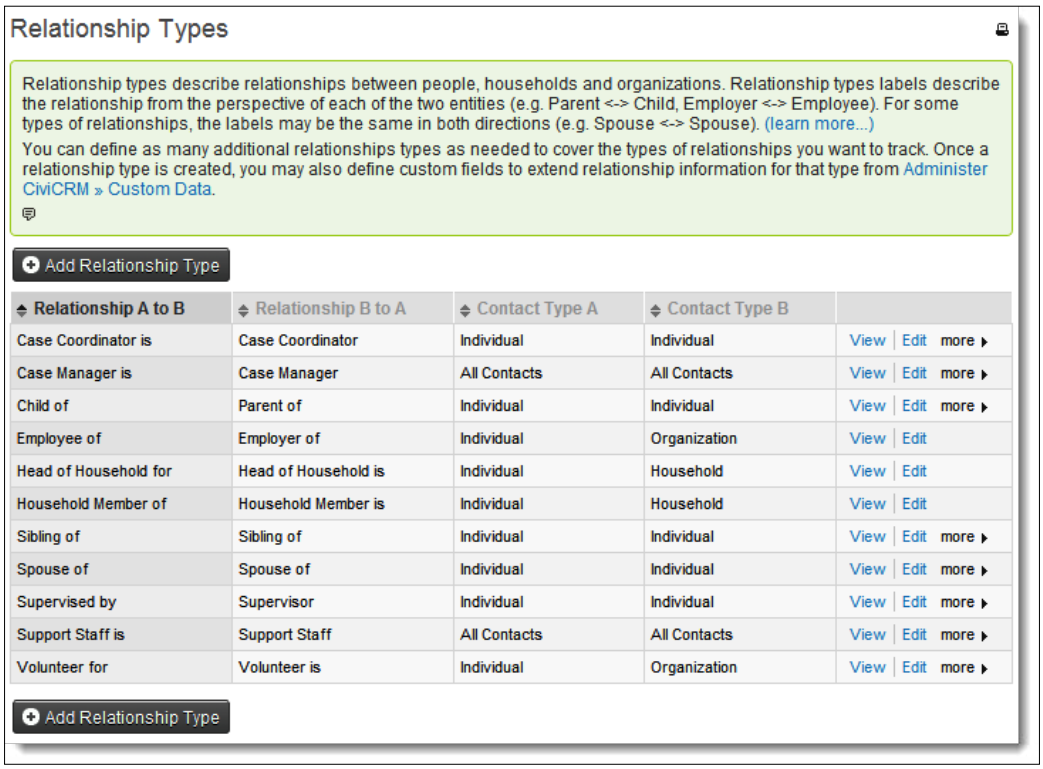
The relationships tab in the contact record lists all the active (current) and inactive relationships. An inactive relationship may occur if an existing relationship is manually disabled (for example, if an employee of a company is on a leave of absence or laid off, and you manually mark the relationship as disabled), or if an end date is recorded for the relationship (for example, you create a board member relationship and record the start and end date based on a two-year term). By default, relationships are assumed to have no set end date.

Entering end dates or disabling relationships rather than deleting them provides a useful way of tracking the contact's history of involvement in various capacities. For example, it may be useful to see the employment history of an individual by reviewing current and inactive **Employee of** relationships. You might use this information to identify influencers for major donors or to find social networks that could facilitate potential strategic partnerships.

Before working with relationships in a contact record, you should review the existing relationships types that are created when CiviCRM is first set up and determine if there are any other types you will need to create.

To do this, go to **Administer** | **Option Lists** | **Relationship Types**.


Relationship Types
Relationship types describe relationships between people, households and organizations. Relationship types labels describe the relationship from the perspective of each of the two entities (e.g. Parent <-> Child, Employer <-> Employee). For some types of relationships, the labels may be the same in both directions (e.g. Spouse <-> Spouse). (learn more...)
You can define as many additional relationships types as needed to cover the types of relationships you want to track. Once a relationship type is created, you may also define custom fields to extend relationship information for that type from Administer CiviCRM » Custom Data.
Add Relationship Type
Relationship A to B
Relationship B to A
Contact Type A
Contact Type B
Case Coordinator is | Case Coordinator | Individual | Individual | View | Edit | more
Case Manager is | Case Manager | All Contacts | All Contacts | View | Edit | more
Child of | Parent of | Individual | Individual | View | Edit | more
Employee of | Employer of | Individual | Organization | View | Edit
Head of Household for | Head of Household is | Individual | Household | View | Edit
Household Member of | Household Member is | Individual | Household | View | Edit
Sibling of | Sibling of | Individual | Individual | View | Edit | more
Spouse of | Spouse of | Individual | Individual | View | Edit | more
Supervised by | Supervisor | Individual | Individual | View | Edit | more
Support Staff is | Support Staff | All Contacts | All Contacts | View | Edit | more
Volunteer for | Volunteer is | Individual | Organization | View | Edit | more
Add Relationship Type

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This table lists relationship labels for each direction (from **A to B** and **B to A**), and whether there are restrictions on the types of contacts allowed for each side of the connection.

If this structure is confusing, use the following statements when reviewing and creating relationships, replacing A and B with your labels:

- [Contact Type A] is a/an [Relationship A to B] a/an [Contact Type B]
- [Contact Type B] is a/an [Relationship B to A] a/an [Contact Type A]

It may also be useful to review a very clear existing relationship type, such as employer/employee, to understand how the label text is used. Using the preceding statements with the employer/employee relationship, we would see:

- [an Individual] is an [Employee of] an [Organization]
- [an Organization] is an [Employer of] an [Individual]

Note that if you select one of the primary contact types (Individual/Organization/Household) when creating a relationship, the relationship will be available to all associated subtypes. However, if you select a subtype for one side of the relationship, it will only be available to that specific subtype.

Adding relationships

Once you have your relationship types configured, you may begin to build connections between contacts. Navigate to the contact record's **Relationship** tab to view, create, and edit their connections.

Two types of relationships may be constructed from an individual record's summary edit screen:

- An **Employee of** relationship will be constructed when you complete the current employer field
- A **Household Member of** relationship will be constructed when you indicate that an individual should share a household record's address

The relationship creation process consists of two steps, namely, selecting the related record based on the type chosen, and filling out the relationship details.

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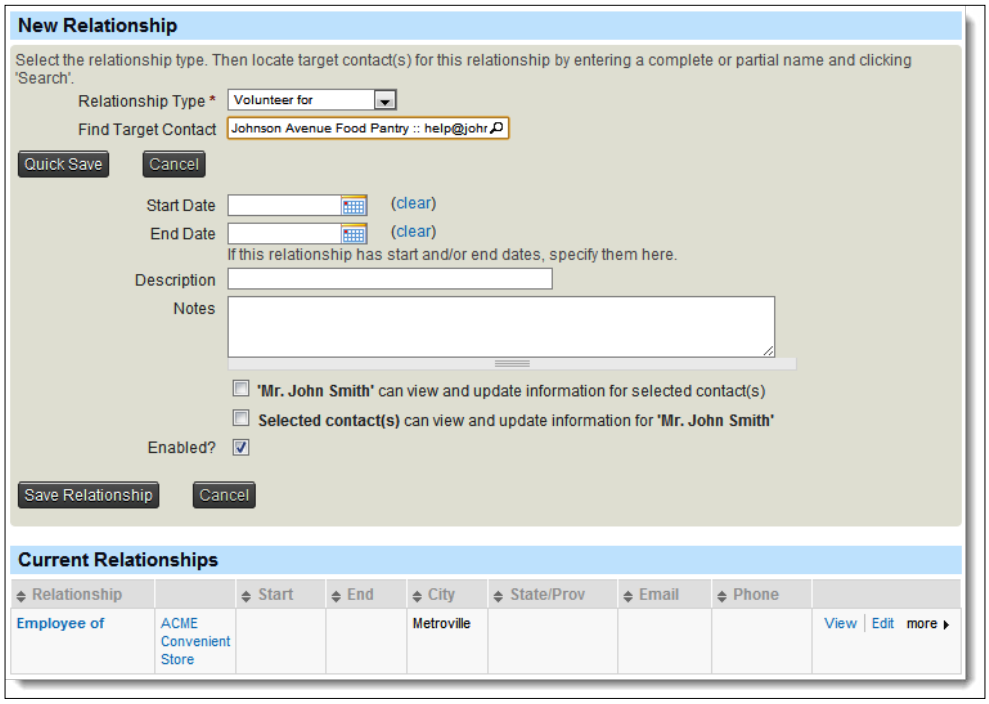

In addition to the basic start/end dates, description, and notes, there is a basic permissioning function handled through relationships. Using the two options presented, you can allow either side of the relationship to view and modify the other side's contact details.

Where does this come into play? CiviCRM has a special contact summary page called the **Contact Dashboard**, which can be exposed to website users. The dashboard provides a snapshot of the user's interactions with your organization, including membership history, event registrations, contribution history, and group membership. In addition, the dashboard may contain a list of relationships defined for the individual and if permissioned through this form, it will allow the logged in user to edit details for the related record(s).

One common use case for this functionality is when you want certain administrative contacts (individuals) to have the ability to edit their employer's records. Since organizations don't visit websites (people do), you would need to allow certain individuals the permission to edit the organization record. Other examples include allowing parents to edit their children's records, teachers to edit their students' records, or household members to edit the household record.

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Activities

Up to this point, we have primarily focused on recording data that describes our contact records. However, the power of a CRM is fully realized with the ability to track and build an ongoing relationship with contacts. We want more than a glorified address book—we want tools that will help write a story about our constituents: what kinds of communication we've had with them, how they've chosen to support the organization financially or through active participation, how long they've been a member, how we've helped resolve issues and concerns they have brought to us, and other such interactions.

One critical way this story is preserved is through activities – recorded communication to and from constituents, or actions taken on behalf of constituents.

Activity records will be created in one of two ways: automatically by the system in conjunction with some other process, or manually by staff working with records.

Certain activity records, automated e-mails in particular, are created when other parts of the system trigger communication with the contact. For example, if a member renews his membership online, the form will send them a receipt by e-mail, detailing the membership record renewal, payment, and any other data fields completed as part of the process. In addition to the membership and contribution records created by this transaction, CiviCRM records the e-mailed receipt as an activity, providing you a complete picture of every piece of communication sent to the contact. Other examples of automated activities include:

- Contribution receipts
- Pledge receipts
- Membership status updates
- Membership renewal reminder e-mails
- Bulk e-mails

Users with appropriate permission can create certain activity records manually. The most commonly used are records of phone conversations, meetings, or manually generated e-mails (in other words e-mails generated outside of the system).
When creating an activity record, you may mark it as complete (a record of a past communication), or schedule it for the future, in which case it becomes a calendared to-do list. In addition, activities may be assigned to other users, providing a useful tool for managing communication among staff members within an office while linking assignments directly to the constituent record.

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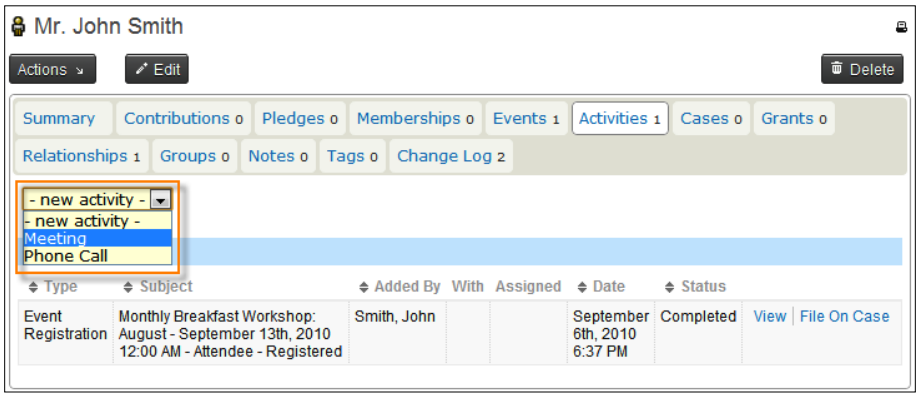
Several standard activity types are predefined in CiviCRM; you may create new types through: **Administer** | **Option Lists** | **Activity Types**. Activities are created using the **Actions** list in the contact record summary, drop-down list in the **Activity** tab, or the **Create New** button. Activities may have associated sets of custom fields to extend the type of data you collect.

Note that while creating activity types, you may designate them for use with Contacts or Cases. **Contact** activity types may be used directly with contact records or with case records, but **Case** types are only visible to case tracking. A full discussion of case management will be covered in *Chapter 1, Achieving Your Mission with CiviCRM*



In addition to assigning and scheduling activity records, you can designate priority levels, schedule follow-up activities, and attach files to the record when creating it.

Consider developing a written policy and procedure to encourage (or make mandatory) staff to record every piece of communication they have with constituents. While the habit of looking up contacts and recording activities every time one communicates with a constituent may initially seem cumbersome, you will quickly realize the value of tracking a complete historical log of communications as you build relationships.

Note that the **Send an Email** activity is special; it does not simply record that an activity took place, but will actually send an e-mail from the system to the specified contact(s). This activity will only be available in the contact record if they have an e-mail address on file.

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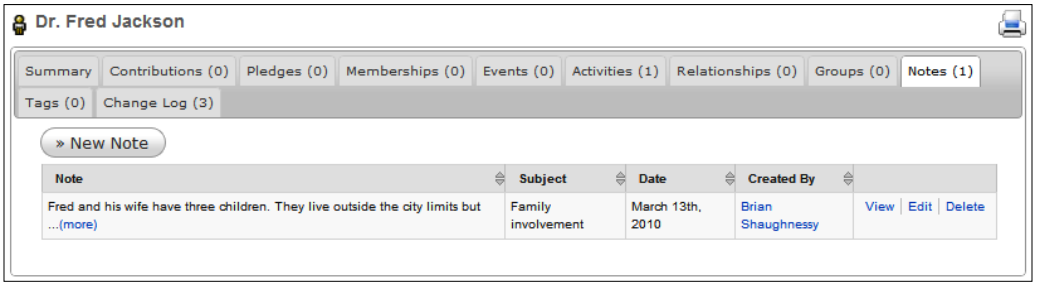
Notes

Inevitably, your interaction with constituents will include collecting personal details about their lives, running into unique situations or circumstances that impact how records were kept, or general information concerning their ongoing involvement with your organization. All of this information is easily stored in notes.

Accessible through a tab on the contact's record, notes provide a simple way to log general information about constituents. Each note includes a subject line, description, and is time-stamped at the time of its creation.



Be careful not to use notes as a catch-all for information better stored elsewhere. In particular, make sure your users understand that activities should be used for communication records with constituents, whereas notes are better used for miscellaneous information about the contact, such as personal details that don't fit into existing contact fields.

Search

As important as it is to understand and become familiar with the contact record interface, we also need to be able to quickly *find* records in the system. We started our exploration of CiviCRM by looking at the quick search field in the navigation bar. **Search | Find Contacts** extends this to allow filtering by contact type, group, or tag. Beyond this basic search, CiviCRM provides four power tools for searching and additional diverse functionality through the reporting system.

Quick search

Quick search is found in the navigation menu, and is best used when you are looking for a specific contact. The text entered into this field will search e-mail addresses (by default) and the contact name (sorted by name for individuals, household name for households, and organization name for organizations). The search will return results for partial matches as you begin typing. You have the option of configuring the tool to use full wildcard searches or only ending wildcards (**Administer | Configure | Global Settings | Search Settings**).

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Full wildcard searches will look for the entered text in any part of the name or e-mail fields. For example, entering "john" would find both John Smith and Mark Johnson. With wildcard search turned off, a search for "john" would only find Mark Johnson, as the sort name field is constructed as "lastname, firstname" by default. Full wildcard search is very useful in small datasets as it provides greater flexibility. For large databases, you will typically want to turn this off as the result sets will become long and cumbersome.

If the full wildcard option is turned off, you may still initiate a wildcard search using the percent symbol (%). You may even use the wildcard value in the middle of a search term; for example, **J%n** will yield John as well as Jones. This "%" character matches any number of characters wherever it appears in your search strings.

Basic search

Clicking on **Search** | **Find Contacts** brings up a form that allows you to search by name or e-mail and filter the results by contact type, group, and tag. Entering more criteria reduces the number of matches, as the results must match *all* of the criteria entered. As with the contact quick search, you may use wildcards to extend how the search is conducted.

Advanced Search

Don't let the term "advanced" scare you away—it's a commentary on the powerful capabilities of this tool, not a statement about how much experience with CiviCRM is required. In fact, the power of advanced search lies in both its flexibility and ease of use. To access this tool, navigate to **Search** | **Advanced Search**.

Advanced search provides a window into just about every field in your system, grouped by their type. Using the paneled interface you can build search criteria across address fields, contributions, membership, events, custom fields, and any other type of data you are managing.

The only significant limitation of the advanced search tool is that multiple criteria across the fields are always joined by the AND operator. If you are familiar with any form of query building, you will recognize the difference between joining multiple criteria with AND versus with OR. AND joins are exclusive—as you add more criteria, your result list becomes smaller as more records are excluded because the records must meet *all* of the criteria provided. OR joins are inclusive—adding criteria expands the result list as *any* record meeting *any* of the individual criteria will be included.

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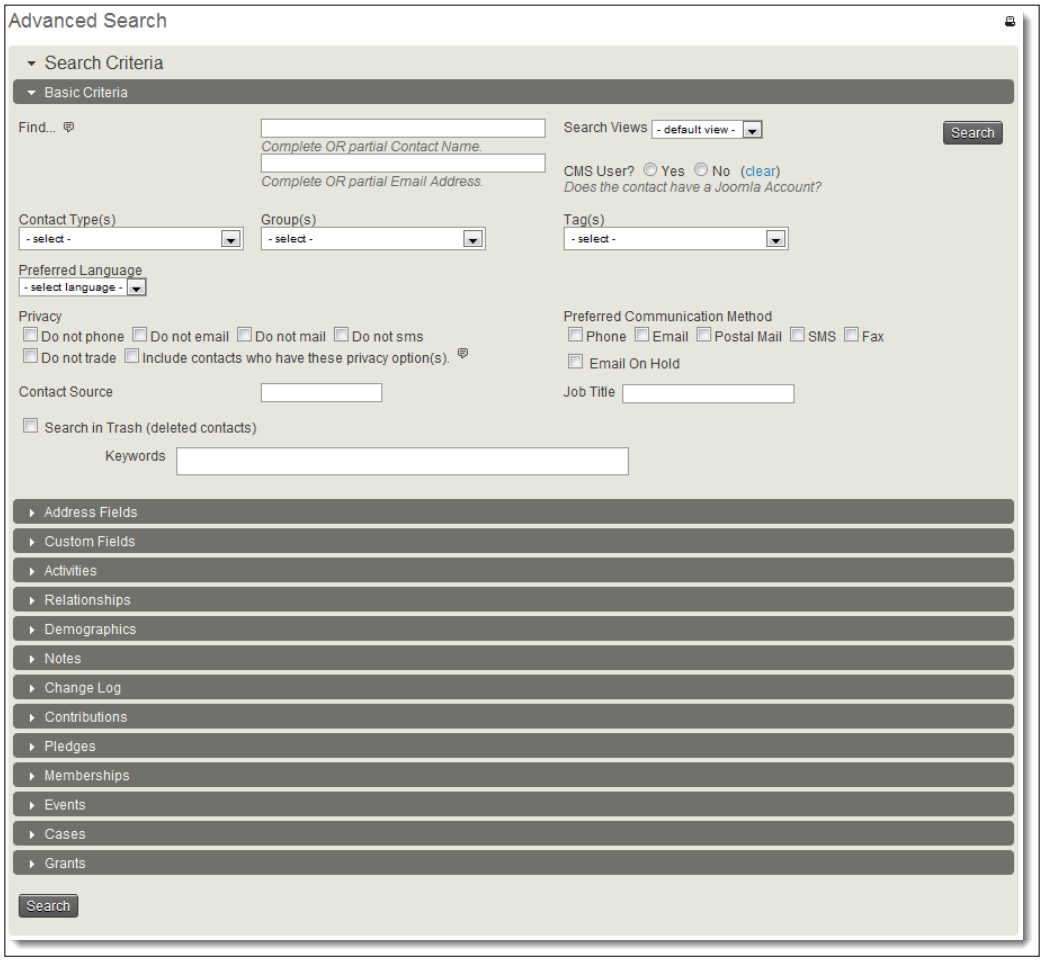
The only exception to this rule in advanced search is the fields presented as a multi-select option list (including a set of grouped checkboxes). These will be joined with OR *within that field*. For example, selecting multiple tags will yield results matching *any* of those tags.

Be aware that a few special fields reverse the normal selection logic. For example, selecting any of the privacy options will *exclude* records meeting that criterion rather than including them (reflecting the normal use of those fields). If you are looking to retrieve a list of contacts who have a certain privacy setting, check the option titled **Include contacts who have these privacy option(s)** in order to reverse the default effect.

As always, inline help text (question mark icon) will provide an explanation and example for non-standard or potentially confusing fields.



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Full-text Search

Have you ever had an experience where you interact with a constituent, perhaps at an event, and can only remember a fragmented snippet of the conversation? You only remember their first name; or was that actually their street address?

CiviCRM's **Full-text Search** scours through contact and related records, delivering a list of results grouped by the record type (contacts, contributions, memberships, and so on). In addition to serving as your partial-memory sleuth, full-text searches can help you find records where the location of the data you're looking for may not be in an obvious location. For example, you might recall recording details about the Smith's family, but are unsure if it was part of an activity, note, or contribution record, or whether it was attached to Mr. Smith, Mrs. Smith, or their combined household record. Searching for the term "family" yields all instances of the text, allowing you to quickly browse through the search summary and find the information you're looking for.

A full-text search is accessed through **Search** | **Full-text Search**, and may be conducted across all major record types, or may be limited to a single type.

Drupal users may enable a **Block** to provide convenient access to full text search. In Drupal, go to **Administer** | **Site building** | **Blocks**, find **CiviCRM Full-text Search** in the **Disabled** section, use the icon to its left to drag and drop it in the region you would like the block to appear, and click on the **Save blocks** button. Like any block, you can configure when it appears by clicking on the **Configure** link beside the block name. For example, you might want to set **Show block for specific roles** to a CiviCRM administrator role.

Search Builder

If advanced search doesn't meet your specific querying needs, CiviCRM provides a search builder to construct criteria sets based on logic statements. Most often, this is needed when your search criteria must include several statements joined with the OR operator (you recall from the *Advanced Search* section that the primary limitation of that tool is the inability to specify a more inclusive (OR) selection).

Querying... logic statements... operators... criteria sets... huh? The search builder is powerful, flexible, and requires some advanced skill to properly construct a search. For most (if not all) of your searching needs, the advanced search and other tools should prove more than sufficient. However, if the other tools do not completely meet your need, you have the search builder available as a powerful tool in your back pocket.

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The builder lets you construct multiple sets of criteria. The criteria *within* each set is joined by AND. The sets are combined together with OR. That allows you to create *exclusive* (AND) criteria and join it with *inclusive* (OR) sets of criteria.

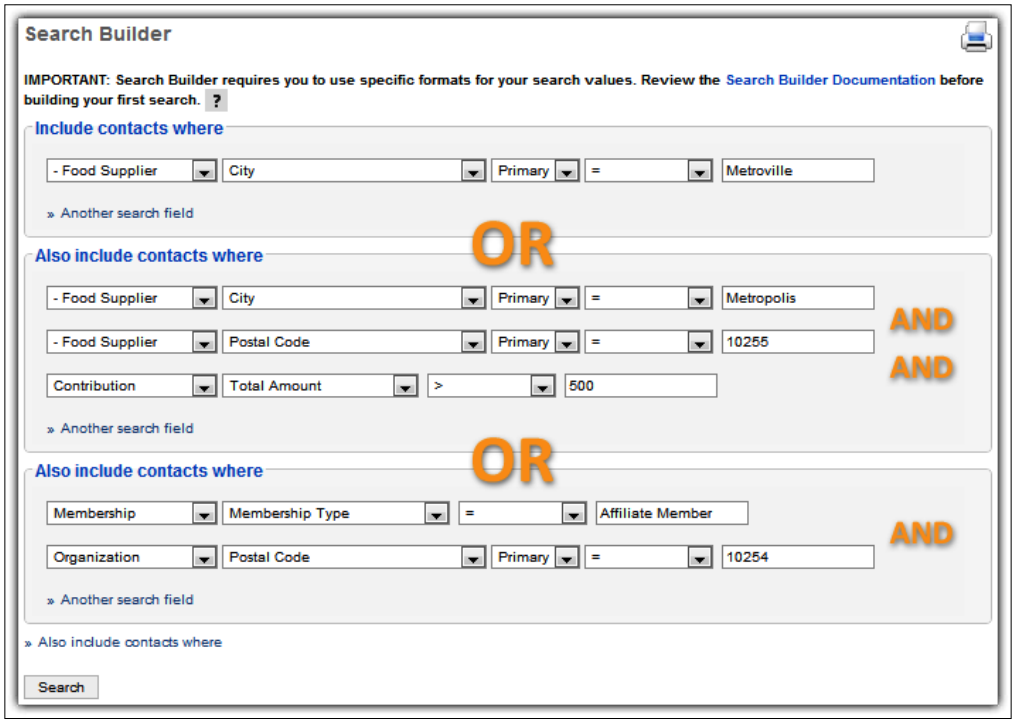
The search builder is accessed through **Search** | **Search Builder**.

FPAGM plans to do more regional outreach to food suppliers in the outlying areas of Metropolis and suburban areas surrounding the city. The outreach will be focused on soliciting more commitments for food donation support during the difficult winter months, when demand at the food pantries increases significantly.

The Executive Director has identified the following criteria to be used for the initial outreach letters:

- All food supplier businesses in Metroville
- Food suppliers in Metropolis with a postal code of 10255 who have donated more than $500 at one point
- Affiliate members with a postal code of 10254

The resulting configuration in the search builder will look as shown in the following screenshot (the **OR** and **AND** text has been added for illustration):



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As you can see, our selection consists of three sets of criteria, which are joined together to yield the result. A food supplier or organization meeting *any* of the three criteria sets (two of which have multiple restrictive criteria) will be included in the results.

There are several things to keep in mind when working with the search builder:

- Search criteria can be built based on contact (including type and subtype-specific fields), contribution, membership, event participant, pledge, membership, case, activity, and grant fields.
- The following comparison operators are used for building criteria statements. Operators define the logical rules for the criteria, determining how the value you enter will be processed using the field selected.
    - **=** means "equal to", and represents an exact match.
    - **!=** means "not equal to".
    - **>** means "greater than" and should only be used with number value fields, such as a contribution amount.
    - **<** means "less than", and should only be used with number value fields.
    - **>=** means "greater than or equal to", and should only be used with number value fields.
    - **<=** means "less than or equal to", and should only be used with number value fields.
    - **IN** is used for groups, tags, and other lists of IDs. The value field may have a comma-separated list (with no spaces) of IDs, surrounded by parentheses, for example, (1,3,9). To retrieve the ID values, visit **Contacts** | **Manage Groups/Manage Tags** and note the ID column value. When working in a group or tag (such as in edit mode), you may also retrieve the ID from the URL by looking for the ID or GID number.
    - **LIKE** means "equal to", but unlike the equal sign, you may use wildcards with **LIKE** to create fuzzy criteria.
    - **IS NULL** indicates that the field is empty, containing no value.
    - **IS NOT NULL** indicates that the field is not empty.
- Several fields require unique formatting:
    - The **State** and **Country** fields may accept either the full state/country name (such as **United States**), or the ID for the option value (**1228**).
    - Dates should use the following format: YYYYMMDD. Note there are no spaces or symbols, for example, March 16, 2010 = 20100316.

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- **Yes/No** fields should have values of **1/0**, respectively (**Yes = 1**; **No = 0**).
- Multiple choice custom fields should use the value of the option that was specified when the field was created as the search criteria rather than its label. The value, stored in the database, may be different from your label, which is displayed to users on the screen. If necessary, revisit your custom data configuration in order to ensure that you are retrieving the correct value.
- Some fields, such as **Membership Type**, require the ID value for the type, and not the type name. If you try to run a search and receive a warning message to enter a valid value, it is likely to have happened because the field requires an option ID number.

Understanding contact versus component searches

All of the search tools we've reviewed so far are contact-based. Regardless of what criteria you choose, the search will return a list of contacts.

What if I need a list of all contributions over $500 made within the last six months? If John Doe has donated more than $500 three times over that period, I would expect to see him listed three times; the fact that he is a regular donor is important information to see in this context. However, searching through the **Advanced Search** (where I have access to the contribution fields) or the **Search Builder** (which likewise can use contribution fields) would yield a list of contacts with no duplicate values.

Throughout CiviCRM, there are typically two "lenses", or perspectives, through which you can search and view records—you can search for contacts, or you can search for their related records. We call the "related record" search a component search. These tools can be accessed through the main **Search** menu (designated in the second block of options) or in the respective main menu item (for example, **Find Participants** is found under **Events**).

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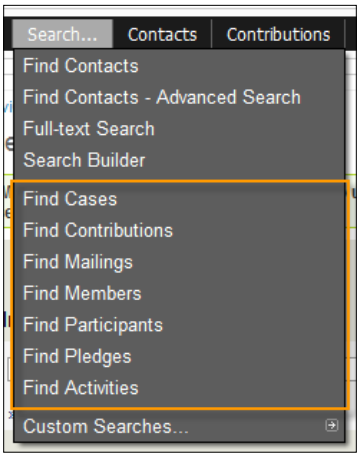

Considering the preceding example, searching for this criterion under **Advanced Search** would yield one record per contact. Conducting this search using the **Find Contributions** form would yield three records, one per contribution.

We will investigate these tools further when we work with some of the components. For now, it is important to understand the difference in how you search and what type of results are being returned.

Custom search

If you still find that you need to conduct a complex search that cannot be accomplished using one of the tools above, review the custom searches found in **Search | Custom Searches...**.

The custom search structure was created as a way for developers to build customized, complex search options and result lists that could not easily be accomplished through the generalized forms. Let's face it—not every possible search option can be squeezed into a single interface without creating complexity and confusion that will render the tool unusable for the average user. Rather than leaving you to work directly in the database, CiviCRM created the custom search structure to provide an interface for developers to meet these specialized needs.

Existing custom search forms are often being improved and new ones are added to the system by the CiviCRM development community. Understand that to actually *create* a custom search form, one must have development skills (and access to the database and code). However, once built, sufficiently permissioned users may access the forms and run searches. If you build a custom search form, consider contributing it back to the project for inclusion in future releases.

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The full list of available custom searches can be accessed by going to **Search | Custom Searches...**. (Note that the fly-out submenu only displays a few of the search forms by default.) Some of the more useful searches include:

- **Contribution Aggregate**: Searches contacts based on their total giving over an amount range and date range. (For example, searches all contacts who have donated between $500 and $1000 in total contributions over the last year.)
- **Include/Exclude Contacts in a Group/Tag**: Builds criteria based on whether contacts have (or don't have) certain group memberships or tags selected.
- **Proximity Search**: If you have geocoding enabled in your system, you may search an address or postal code, and retrieve a list of contacts within a defined radius. This form can also be filtered by tags. For example, FPAGM wants to search for all non-profit food pantries in a 10-km radius of the postal code, 10255.
- **Activity Search**: Searches for activities based on the contact type, activity subject, activity type, status, or dates.
- **Price Set Details for Event Participants**: Price sets provide flexible options for configuring event fees. However, their flexibility creates some complexity when generating lists of event participants. This search will return a list of registrants for the selected event, broken down by the price set fields and options.
- **Contributions made in Year X and not Year Y**: Charitable not-for-profits who rely heavily on donations for their revenue will want to identify past contributors who have not donated recently. This grid-based search form retrieves contributions for date ranges and amounts you've designated for inclusion (past years) and exclusion (not this year).

The list above is just a partial review of the custom searches available. Take time to familiarize yourself with the tools available as you may want to make use of them as you work in the system.

By default, CiviCRM only includes a few custom search forms in the Custom Search fly-out menu (main Search menu item). If you find that you are using certain custom searches frequently, consider modifying your navigation menu to include the desired page in the search menu item listing. Visit **Administer | Customize | Navigation Menu** to configure the navigation menu.

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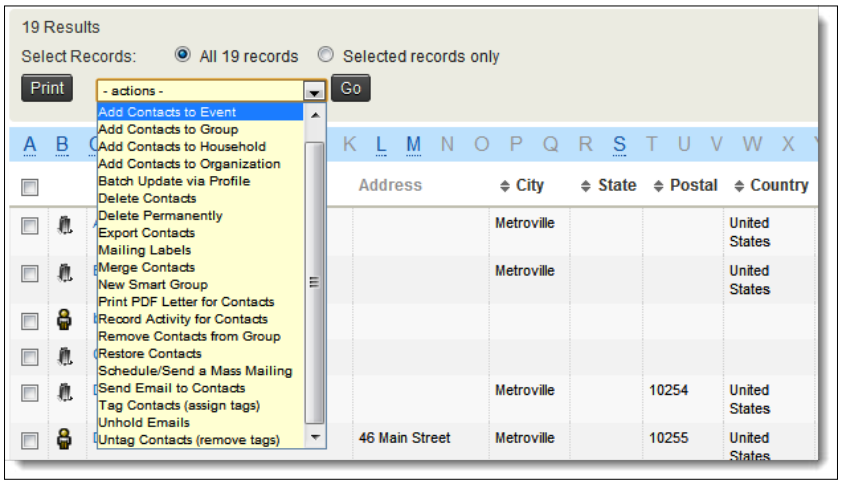
Search result actions

At this point, we have our arms around the contact record, can navigate through the system, and now can conduct crazy searches to our heart's content. However, now that you've triggered a search and have the records you're looking for, what do you do next?

Sometimes, you'll conduct a search to find a specific record, and then navigate to the contact and perform some work on their data. However, more often you are searching for groups of records and want to perform bulk actions on either the full or partial result list.

CiviCRM accomplishes this through the action drop-down options. After conducting a search, select the **All X records** radio button or **Selected records only** (if you want to manually choose records from the result to take action on). This will enable the actions drop-down list. Choose your desired action and click on **Go** to continue.



As you can see from the list of options, there is no shortage of actions you may take. We will review them briefly, grouped according to the type of the action rather than in alphabetical order.

Mail actions

CiviCRM provides two actions that are useful for postal mail, and two that are useful for e-mail:

- **Mailing Labels**: Print contacts to `PDF` using the mailing label options set at **Administer** | **Configure** | **Global Settings** | **Address Settings**.

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- **Print PDF Letter for Contacts**: Use this option to generate merge letters directly from the system. You will want to create a basic template that mimics the layout in your word processor. Once created, you can generate letters, insert placeholder tokens as merge fields, save letters as templates, and print them to a `PDF` file.
- **Schedule/Send a Mass Mailing**: If CiviMail is enabled and configured, you may generate a bulk mailing directly from the search results. Choosing this option will trigger the bulk mailing wizard and walk you through each step.
- **Send Email to Contacts**: If you have a small set of records you're working with and don't need the full functionality of CiviMail bulk mailing, you may simply send the contacts a basic e-mail using this option.

Groups and tags actions

After finding and selecting a number of contacts, you may want to make it possible to conveniently retrieve or act on the records later.

- **Add Contacts to Group**: Adds selected contacts to a group
- **Remove Contacts from Group**: Removes the selected contacts from a group
- **New Smart Group**: Saves your search to a dynamic smart group so it can be retrieved later using the same criteria
- **Tag Contacts:** Adds a tag to the selected records
- **Untag Contacts**: Removes a tag from the selected records

Add relationship actions

CiviCRM allows you to add two types of relationships to contacts from the standard search results listing:

- **Add Contacts to Household**: Creates relationship with the selected household record using one of the relationship types defined for households
- **Add Contacts to Organization:** Creates relationship with the selected organization using one of the relationship types defined for organizations

Add related record actions

A couple of actions on multiple contacts involve creating related records for each of the selected contacts:

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- **Record Activity for Contacts:** Creates an activity record and associates it with multiple contacts at once. One helpful use of this option is to record mailings. Let's say you run your search and want to export the records for delivery to a mail house. After running the export, add an activity to the same result list to record the details of the mailing, for example, "Volunteer Solicitation Letter", with an attached copy of the document used for mailing.
- **Add Contacts to Event**: Registers the selected contacts for an event. The only limitation of this action is that you have to select a single set of registration options to apply to all contacts selected. You are also not able to record payment details in bulk.

Update contact actions

Several actions operate directly on the contact records, allowing you to merge, update, delete, or undelete them:

- **Batch Update via Profile**: Profiles are collections of fields that you've defined in the system. You may use profiles to edit up to 100 contact records simultaneously.
- **Merge Contacts**: Trigger the deduplication/merge tool using the selected records. You will be redirected to a page where you can review the records and choose the fields that will be merged from one record to the other.
- **Delete Contacts**: Move the contacts to the trash (if this system is enabled).
- **Delete Permanently**: Completely remove the contacts from the system.
- **Restore Contacts**: If you've searched for deleted (trashed) contacts, you may use this option to restore them in bulk.
- **Unhold Emails**: Remove the **On hold** e-mail status for selected records.

Export/map actions

The following two actions support doing something with contact records, rather than changing them:

- **Map Contacts**: If geocoding is enabled on your site, you may create a map with the selected records pin-pointed on it.

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- **Export Contacts**: Inevitably, you will need to conduct searches and export the results to a `.csv` file (comma-separated values) to be used for various purposes—sending to a mail house, conducting calculations on the data, merging letters, transferring to someone via e-mail, and so on. The export records process consists of two steps:
    - Choose the export type—default primary fields or your own selection of fields. You may save export mappings (collections of fields) for reuse at a later time.
    - If you've chosen to select your own fields, you will be shown a grid where you choose the contact type, field, and relevant field parameters. At the bottom of the page, you can save the export mapping, update an existing one, and export the list to `.csv`. When defining your field selections, remember that the field will only export data if it is appropriate to the contact types in your search results. For example, if your search results contain only individuals, any household fields defined in your export will be empty. Also note that there are options to export related records. For example, if I would like to retrieve the State value for the organizations associated with people through the employer relationship, I can do so using the "related contact info" options toward the bottom of the field list.
    - When exporting records, you may merge records with the same address or merge household records. The former option will identify contacts with the same address and merge them into a single record. The latter option will look for records in your result list that are part of a household, and export the household record instead of the individual contact records. Both of these options will help prevent sending multiple mailing pieces to the same address, reducing your mailing costs. Note that these options do not impact the records themselves; they only impact how the export file is generated.

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Subsequent actions on the same selection

You will find in many cases that after triggering an action, you can return to the search result list and trigger a follow-up action. The record activity example above is a good example of where this can be helpful—after exporting your records for a mailing, perform a second activity action to record the mailing details.

FPAGM has an upcoming Board Meeting and must notify the Board members about the logistical details. They use the simple search to retrieve all contacts which are a part of the existing **Board of Directors** static group. From the action list, they choose to send an e-mail to all the records in the result list. The e-mail contains information about the location, time, parking details, and a copy of the agenda as an attachment.

In addition to the direct benefit of reminding the Board about the meeting, FPAGM values the fact that a record of the e-mail is attached to each contact as a completed activity. This provides a historical record of communication with the Board, and may be helpful should one of the Board members claim that they did not receive the reminder.

Working with contact records

Throughout this chapter, we've covered a lot of ground with regard to contacts. However, our emphasis has been on understanding the types of data collected, navigating through the system, and working with search tools and results. Let's wrap this chapter up by looking at alternate workflows and record maintenance through deduping tools.

Alternate workflows

We are working within a CRM, a *Constituent*, or *Contact* relationship management tool. So it's natural to view your data through the lens of contacts. Just about everything we've covered thus far has done this; we've either been working inside a single contact record or we've conducted a search to take action on a group of contact records.

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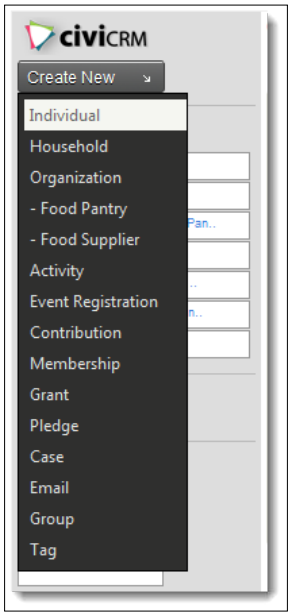
However, sometimes it may seem more natural to start with the action instead of the contact record. CiviCRM provides several options for this type of alternate workflow.



On the left sidebar, you will see a C**reate New** button and a drop-down menu. This button is always visible in Joomla!, and is a default-enabled block in Drupal. Drupal users may configure it through the Drupal **Administer** | **Site building** | **Blocks** tool. In addition to options for creating contacts, there are options available for creating an activity, contribution, e-mail, event registration, membership, pledge, group, or tag.

Many of these options are also listed under the appropriate main menu item (for example, **New Contribution** is listed under the **Contributions** menu).

Choices that will create records attached to a contact will have a contact field on the form where you can begin typing an existing contact name or choose to create a new contact from the drop-down.

Creating a new record "on-the-fly" causes a pop up window to appear with a few contact fields. This form is configurable through **Administer** | **Customize** | **CiviCRM Profile**. By default, it contains only a few required fields. You may want to expand what fields are included in order to ensure that the system users collect more information when they are entering records into the system.

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The profiles used for "on-the-fly" contact creation are entitled **New Household**, **New Individual**, and **New Organization**. Notice in the CiviCRM profile listing page, that these are marked as **Reserved**. Throughout CiviCRM, any records marked as **Reserved** cannot be deleted, and will be used for special purposes in the system. It is recommended that you do not make any radical modifications to reserved records, as it may have unintended consequences in the system. For example, we advise against renaming the **New Individual** profile, and then using it as a contact signup form.

Eliminating duplicates

Data is king. Even the most advanced CRM tools will be virtually useless if the data it is handling is incorrect, messy, or outdated. Your system will live or die based on the principle of garbage in/garbage out.

What steps can you take to improve the quality and reliability of your data? One important way is to reduce record duplication.

Record duplication is an unavoidable reality, especially once you begin to expose forms to the front of your website and invite constituents and site visitors to submit their own data. Fortunately, CiviCRM has several ways of dealing with record duplication.

Strategies for dealing with duplicates

There are three strategies we will use in the fight against duplicates:

- **Policies and procedures**: Yes, the first tactic is a human resource and management strategy. Anyone who is working in CiviCRM as an administrator must understand the importance of reducing duplication. You can start this is by enforcing a policy where every time a user is going to work on a contact record, they begin by doing a search for the contact. Simple, right? How many times do people enter the system and immediately begin by creating a new record? CiviCRM's auto-fill search tools will help significantly, but they will only benefit you if they are used.
- **Inline deduping**: While creating or editing a contact record, CiviCRM does a lookup to see if there is a potential match with an existing record. If so, you are given the option of visiting the potential duplicate record or continuing to save your current record. CiviCRM uses deduping rules (discussed in the following point) to define what potentially constitutes a match. The default fuzzy rules are used for inline deduping. You may also trigger a dedupe check with the **Check for matching contacts** button.

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Understand that this functionality is a safety net—don't rely on it as your first line of defense. One potential loophole with this tool appears if the new contact has minimal data completed and consequently there is insufficient information to verify a duplicate match. For example, the default individual rule matches on first name, last name, and e-mail. If I add a record with the first name, last name, and address, it may not flag a potential duplicate because the e-mail didn't match.

- **Find and Merge Duplicate Contacts**: Available through the **Contacts** menu, this tool can be used to search your database for potential duplicates and merge them.

  Regardless of how well you adhere to the first two policies, you will need to schedule periodic maintenance routines, where you manually run the **Find and merge duplicate** tool on your records. Depending on the size of your organization and where you are regularly obtaining new data (for example, through online forms), you may schedule regular deduping on a weekly, monthly, or semi-annual basis.

Finding and merging duplicates

When you first click on **Contacts | Find and Merge Duplicate Contacts**, you will see a list of six matching rules—two for each primary contact type, designated as either **Fuzzy** or **Strict**, and flagged as **Default**. The **Fuzzy** or **Strict** designation is used for your reference, and also impacts how the default rules will be used by the system.

The default **Fuzzy** rule is used for the automated inline deduplication check we just described. When a contact record is entered, the appropriate default fuzzy rule (based on the contact type) is used to determine if there's an existing match. It may be fuzzy/looser in its matching criteria because the user is directly involved in the review and acceptance/rejection of the duplicate is possible.

The default **Strict** rule is used for automated deduplication checking for frontend forms and bulk imports. For example, if you have a newsletter signup form using a profile and have chosen the option to update the record on a duplicate match, the strict default rule will be used to determine if the form submission matches an existing record.

Note that it is your responsibility to actually configure the rule settings for the level of strictness and fuzziness you desire. In most cases, you will find the default settings adequate for these purposes.

From this screen, you initiate a manual deduplication check, and can edit or create new rules for a contact type.

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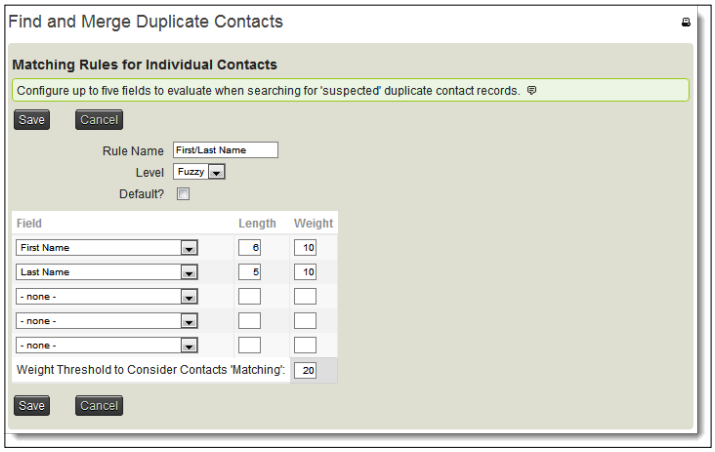
FPAGM recently hosted their annual conference, drawing over 350 people from the state to learn more about food pantry management best practices and hear about other homeless action initiatives happening throughout the country. A majority of the participants registered online. While this significantly eased the amount of data entry work required by staff, it did generate duplicate records in the system as many participants were not careful while filling out the forms.

A majority of the Association's existing contact records (prior to the conference) did not have an e-mail address, so the default matching rules were too strict for their needs. They decided to create a new fuzzy individual rule to match on first name and last name.



Finding duplicates

The matching rules configuration form consists of three columns that may be configured: **Field**, **Length**, and **Weight**.

- **Field**: This indicates the data to be tested as a potential match.
- **Length**: This indicates how many characters in the field value should be measured. A lower value will result in more matches, as more records are likely to find a match if a shorter value is used. For example, a length of four in the last name field would match Johnson and Johnston, whereas a length of six would not match (Johnso != Johnst). In the preceding example, we are seeking to have a fairly fuzzy match, so we've defined a short length. Leaving the field blank will require a match on the entire field value.

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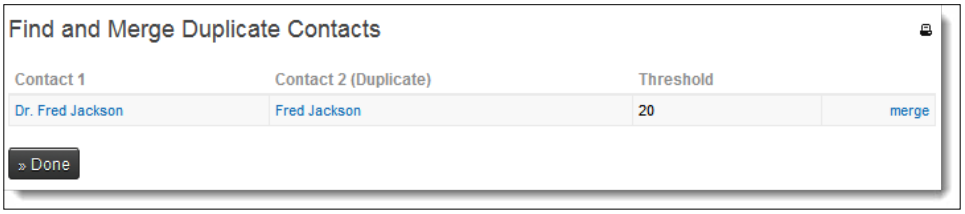
- **Weight**: This is used to calculate the likelihood of a match. Using the preceding rule, a match on both first name (10) and last name (10) yields a total score of 20, which meets the threshold value at the bottom of that column. The example above is very basic; we are simply requiring a match on all fields for the system to consider the contact a potential match. Consider an alternate configuration:
    - First name (10), Last name (10), E-mail (5), City (5), Total threshold = 25
    - In this configuration, a match on first name, last name, and e-mail, OR first name, last name, and city, would both meet the threshold and return a potential match

You will want to think carefully through your settings for dedupe rules. Rules that are too strict may result in missing some valid duplicates, and rules that are too fuzzy will yield long result lists that are cumbersome to work with. In particular, review the default **Strict** rules, as these impact deduplication/merging in hands-off environments (online forms and imports).

Once you've configured your rule, click on **Save** to return to the rule list and click to use the rule. By default, a rule will be run against the entire database (with the contact types appropriate to the rule). However, you can also choose to restrict the process to a group. This is helpful if you have a very large database and want to process deduplication in smaller chunks of targeted records.

Merging duplicates

After triggering (running) a rule, CiviCRM provides a list of potential duplicate contacts. The two potential matches are listed, along with the total weight (higher weighted matches are first), and a link to merge the records.



The merge function is where the real power of this tool is realized. Both records are presented in a grid, and you decide which fields will be moved from the duplicate on the left to the main contact on the right. In this way, you can choose exactly what fields will be merged. The tool will also combine any related records, such as activities, contributions, membership, and so on. This is important, as you would not want the historical data contained in those records lost as a result of the merging process.

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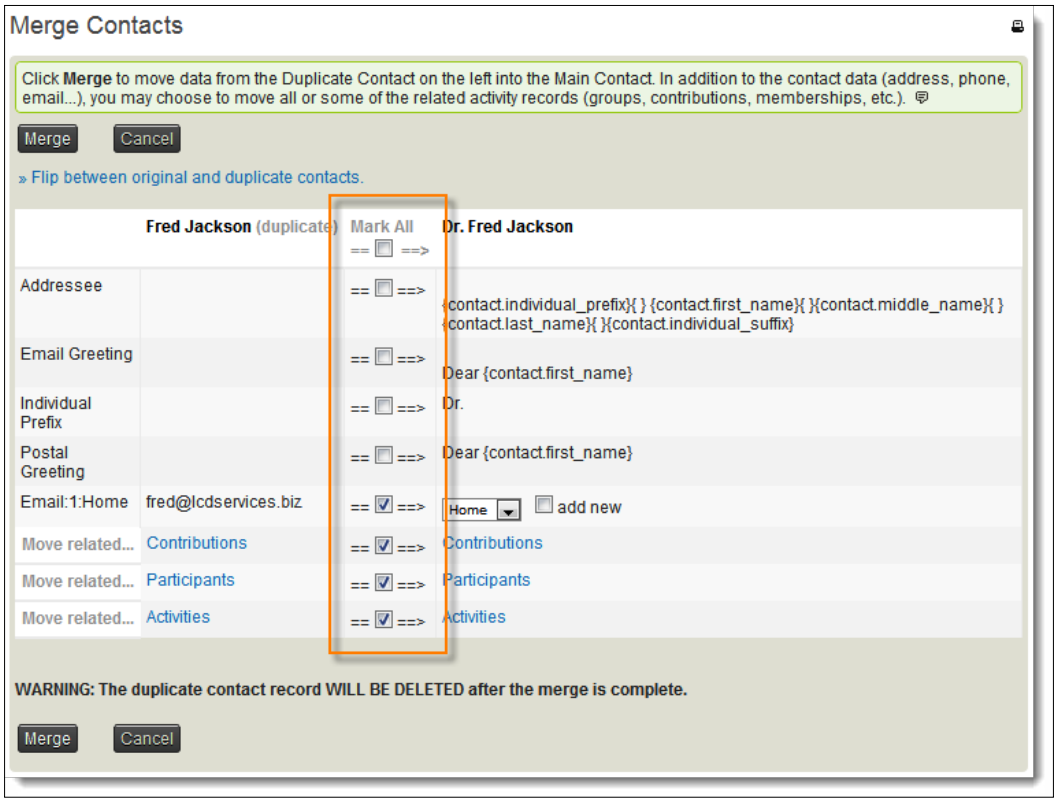
Be careful! Dedupe/merge is a powerful tool. Once you choose to merge the records, the duplicate contact will be deleted from the system. If the contact trash is enabled, the duplicate will be moved to the trash.



As you can see from the preceding screenshot, we've chosen to merge the e-mail (missing in the main contact), and the related contribution, participant, and activity records (in order to preserve the historical data).

After completing the merge, you are returned to the resulting merged contact. If you plan to merge multiple records found after running the rule, use the middle mouse button or *Ctrl* + click to open the merge tool in a new browser tab/window.

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Summary

In this chapter, we delved into the heart of CiviCRM—the contact record. We did the following:

- Learned how to navigate effectively through the system
- Thought through the implications and configuration of contact subtypes
- Created contact records and discovered the types of data we store with the record
- Organized records with groups, and categorized them with tags
- Built relationships from one contact record to another
- Tracked communication with contacts using activities and miscellaneous information with notes
- Ran searches and looked at the difference between contact and component-based searches
- Performed actions on search results
- Discovered alternative workflows available through the system
- Conducted the important maintenance process of deduping and merging records

At this point, you should feel comfortable with the CiviCRM interface and understand the basic contact functionality and concepts. In *Chapter 5*, *Collecting, Organizing, and Importing Data*, we will look at the broader picture of inputting and segmenting your data.

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5
Collecting, Organizing, and Importing Data

It's all about the data, right? You can have the latest and greatest software tools available, perfectly customized to meet the needs of your organization; but if your data is incomplete, virtually non-existent, or just plain lousy, all of those wonderful tools will mean nothing.

In the previous chapter, we walked through the ins and outs of the CiviCRM interface, understanding the different types of records that will be attached to contacts. However, how do we collect data, organize it, and import it into the system?

In this chapter we will:

- Create custom data fields to store data
- Organize data fields in profiles for the purpose of creating online forms and other tools
- Integrate profile forms with membership, event, and contribution pages
- Update multiple contact records at once
- Import contact records and activities from an external source

Custom data fields

Out of the box (or more accurately, off the website), the fields included in CiviCRM to store your data are pretty basic. They include standard communication fields (phone, e-mail, website, and so on), address fields (street, city, state/province, country), demographics (gender, birth date, and so on), and a few additional miscellaneous fields.

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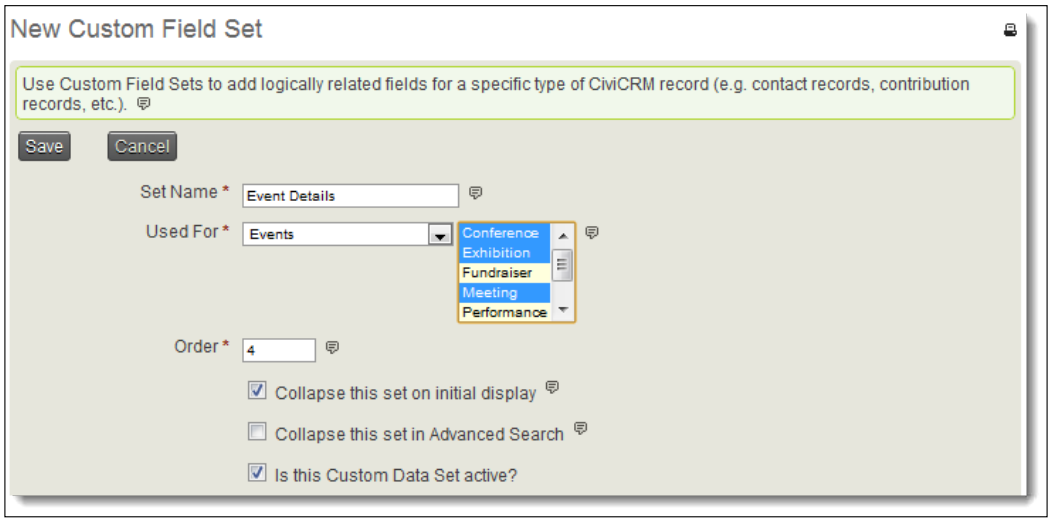
Whether you are migrating from an existing database or starting from scratch, you will inevitably have additional data you need to store in fields. CiviCRM provides for this need through its custom data tools.

Custom data consists of **groups** and **fields**. You first define a group and assign it to an existing data object; you then create fields within that group.

By data object, we mean an existing type of record. Your custom fields will extend some type of record in your system, such as individual contacts, membership records, or groups. You configure what record type will be extended, along with any associated subtypes or options, when you create the custom data group.

Let's take a look at the custom data interface and walk through the creation of new custom fields to get a better sense of how this works. We can access custom data through **Administer** | **Customize** | **Custom Data**.

Begin by clicking **Add Set of Custom Fields**. Enter a name for the group and select how it will be used (what record type it will extend). This is the most important step in the process—once you begin collecting data in these fields, you will not be able to change the type of data it is connected to. Many of the options available will provide additional sub-options. For example, if you create a custom data group attached to events, you may then specify one or more event types that the data set will be used for (select **–Any–** to expose the custom fields to all event types).



Let's briefly review the uses available:

- **Activities**: Available when creating or editing an activity record. You may further restrict its use to one or more activity types.

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- **Contacts**: Available to all contact types. Use the **Individual/Household/Organization** options if you wish the fields to only be available to a single contact type or subtype.
- **Contributions**: Attached to contribution records and may be restricted to one or more contribution types.
- **Events**: Available when creating an event and may be restricted to one or more event types. Note that this is used for tracking information *about* events, and not for collecting information from registrants. Use one of the participant options for registration data.
- **Grants**: Available when working with a grant record.
- **Groups**: Available when working with a group.
- **Household**: Used with **Household** contact types and may be restricted to one or more **Household** subtypes if defined in the system.
- **Individual**: Used with **Individual** contact types and may be restricted to one or more **Individual** subtypes if defined in the system.
- **Memberships**: Attached to membership records and may be restricted to one or more membership types.
- **Organization**: Used with organization contact types and may be restricted to one or more organization subtypes, if defined in the system.
- **Participants**: Available to all participant (that is, registration) records.
- **Participants (Event Name)**: Available to participant records for the event(s) selected.
- **Participants (Event Type)**: Available to participant records for the event types selected.
- **Participants (Role)**: Available to participant records for the roles selected.
- **Pledges**: Attached to pledge records.
- **Relationships:** Attached to relationship records and may be restricted to the relationship types selected.

At the risk of being repetitive, we want to underscore the importance of thinking through exactly how your data will be used and where it should be attached before creating your custom data set. Once defined and in use, you cannot change the way the custom data group is used.

Note that you are not limited to one custom data set per used-by type. You may create as many custom data sets as you wish and may create multiple sets attached to the same record type for the purpose of organizing your fields into different tabs or inline collapsible sets.

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After naming your group and choosing how it will be used, you can set the order (helpful if you have multiple groups used for the same record type), add descriptive text before and after the fields, and choose from several configuration options. These include:

- Whether the field set should be collapsed when the record is first opened, or expanded so that the fields are visible
- Whether the field set should be collapsed when viewed in the advanced search or expanded by default
- Whether the group is active

If your group is attached to one of the contact record options (**Contacts**, **Individual**, **Household**, or **Organization**):

- **Display Style**: The fields may be presented inline (**Inline**), appearing in the contact's summary and edit screens, or in their own tab (**Tab**) in the contact record.
- **Multiple records**: This is used for collecting multiple sets of records for a contact. By default, the fields you create will have a one-to-one relationship with the contact record. Selecting this option allows multiple records for the contact. This is helpful, for example, if you want to track education records for individuals where each record will have details about a single educational experience. A contact might have multiple records indicating their secondary school, undergraduate, and graduate education.

There are currently some limitations when using the multiple-record options, most notably that there is no way to expose those fields to website forms (profiles) without custom coding. Multiple-record sets must be displayed in a tab, not inline, and only the first of multiple records will be exported. In addition, be aware that once you flag a custom group for use with multiple records, you cannot undo that setting and change it back to a single-record structure. This is because you may have added multiple data records and CiviCRM would have no way of determining which of the multiple records should be retained as the single set of data.

Save your custom data set and advance to the form for creating your first custom field associated with this set. You may return at any time to adjust the settings for your group or add/delete/modify settings for fields.

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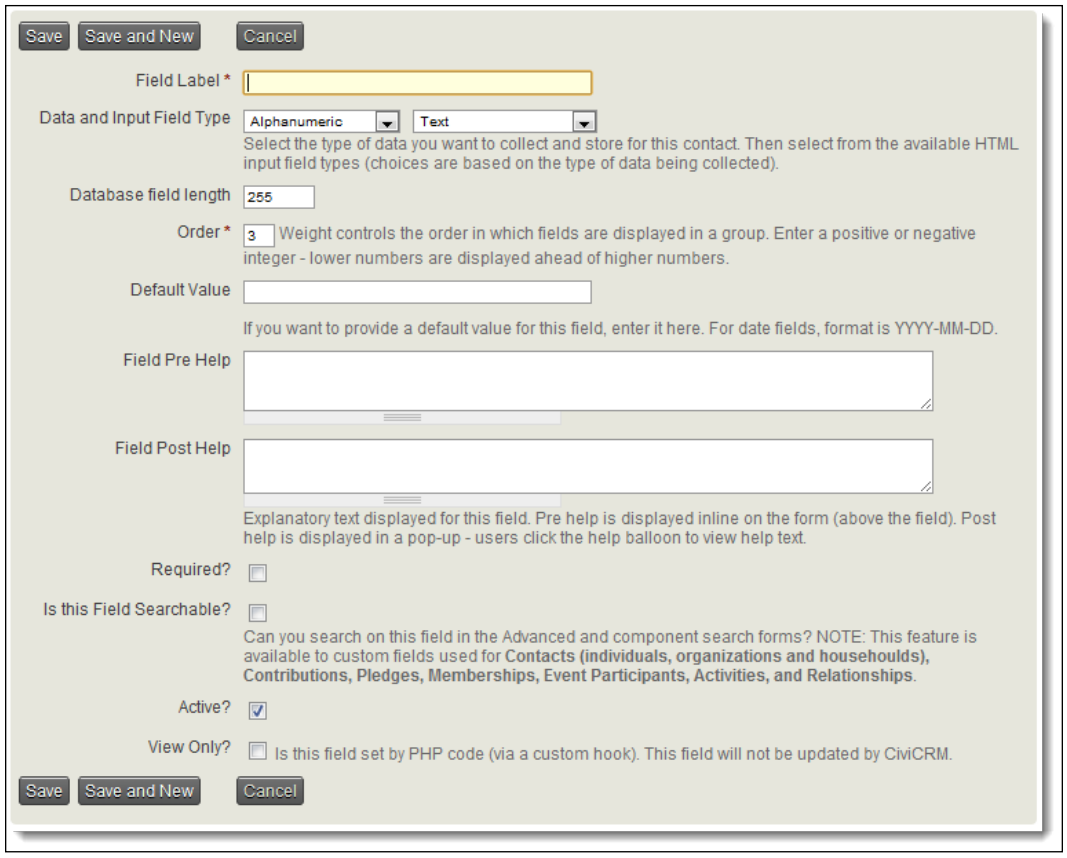
Save
Save and New
Cancel
Field Label *
Data and Input Field Type
Alphanumeric
Text
Select the type of data you want to collect and store for this contact. Then select from the available HTML input field types (choices are based on the type of data being collected).
Database field length
255
Order *
3
Weight controls the order in which fields are displayed in a group. Enter a positive or negative integer - lower numbers are displayed ahead of higher numbers.
Default Value
If you want to provide a default value for this field, enter it here. For date fields, format is YYYY-MM-DD.
Field Pre Help
Field Post Help
Explanatory text displayed for this field. Pre help is displayed inline on the form (above the field). Post help is displayed in a pop-up - users click the help balloon to view help text.
Required?
Is this Field Searchable?
Can you search on this field in the Advanced and component search forms? NOTE: This feature is available to custom fields used for Contacts (individuals, organizations and households), Contributions, Pledges, Memberships, Event Participants, Activities, and Relationships.
Active?
View Only?
Is this field set by PHP code (via a custom hook). This field will not be updated by CiviCRM.
Save
Save and New
Cancel

As with the configuration for custom data sets, it is important to think carefully as to how your fields will be used. While you may return at a later time to alter some of the settings, the **Field Type** cannot be changed once it is set. This is for a simple reason—once data is collected for a specific field type, it will be stored in ways specific to that type. Changing the type could easily result in data loss. For example, if I create an **Alphanumeric Text** field and later want to change it to a **Date** type field, existing data would be lost, as it cannot reliably convert a string to a date-type format.

After naming your field, select the data type and corresponding display type. The options available will depend on what data type you've selected. The following data types are available:

- **Alphanumeric**: This is used for standard text fields. It may hold numbers, but they will be stored as text (you cannot run calculations with them). The field length is limited to 255 characters.

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- **Integer**: The size of numbers that can be stored depends on your server, but is likely to be about plus or minus two billion on 32-bit operating systems, and about plus or minus 9E18 on 64-bit operating systems.

CiviCRM silently rounds integer values entered outside the allowable range to the minimum or maximum value without displaying an error.

- **Number**: This should be used for values requiring decimals.
- **Money**: Used for monetary values. It will be displayed according to the default currency selected in your global settings.
- **Note**: This field is used for longer text strings, such as lengthy descriptions or comments.
- **Date**: You are given the option of selecting what date and time format will be used, including using only parts of the date. For example, if you want only the year and month, you may choose from several options displaying those values. When configuring dates, you also decide how many years in the future and past will be available to the calendar widget.

Currently, all date fields make use of a popup widget to select the date. While this is helpful for ensuring accurate data storage (the widget constructs the value from the selection and places it in the required database format), it means partial date fields (such as selecting year only) will still operate by selecting a specific month/day/year. This is unfortunately non-intuitive from a data-entry standpoint. It also impacts searches on these custom date fields, and may yield unexpected results. If you need month or year-only fields, you may find it easier to use an alphanumeric select box field as it provides more control over the display and searching.

- **Yes or No**: While alphanumeric checkbox fields can be used for yes/no functionality (where checked equates to Yes), this field may be more useful when you need to easily search for explicit "no" values. You could make this field required and set a default value of 0 (that is, No) to ensure all records have a value recorded, thereby improving your control over searches through this field.
- **State/Province**: This will populate with a list of states and provinces enabled in your site.
- **Country**: This will populate with a list of countries enabled in your site.

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- **File**: Browse button to upload a file. Files will be stored in the upload directory defined in global settings. A link to access the file will be presented in the custom data display. When you return to edit a record for which an existing file has been attached you will have the option of replacing the file with another upload or deleting the existing file.
- **Link**: Hyperlink, which will be hot-linked when in view mode.
- **Contact Reference**: Used to link to another contact record. The field will render as an auto complete field and will allow you to begin typing to locate another contact in the database.

By default, the contact reference type field will pull contact matches from the entire database. In most cases, you will not want to do this, as it would expose all your contact records to whoever is using the form. CiviCRM provides a hook for customizing the list of records available to the auto complete field: `hook_civicrm_contactListQuery`. For more details about using hooks to customize CiviCRM, visit `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviCRM+hook+specification`.

After selecting your field type, choose your preferred display format. The options available depend on the field type, and several field types have only one option value. We will list and describe all of the display types that may be available.

When choosing a display type that includes a list of options (such as select/checkbox/radio buttons), you will be provided a form for creating the option labels and values. You can enter up to 10 options initially; after saving them, you can add more. You are also given the option of reusing a list previously created for another field. The label is what will appear in the forms; the value is what will be recorded in the database and exported from the system.

Label text should be descriptive and meaningful to the person completing the form. Most of the times you will enter the same value for both label and value, unless you have a good reason to make them different.

The display types that appear are as follows:

- **Text**: Basic text field.
- **Select**: Drop-down box; select one option.
- **Radio**: Radio buttons allow you to select one option from the list available. If the field is not required, a link to unselect any options will be included in the display. You may decide how many options will be listed per line.

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- **CheckBox**: Checkbox list allows you to select or deselect any of the options. You may decide how many options will be listed per line. Note that one weakness of checkbox options is the inability to easily search for unchecked values. If that option is important to you, consider creating yes/no type fields for each option and make it required. That will result in explicit values for both options.
- **Multi-Select**: List of options, allowing the user to select one or more option. Use the *Shift* key to select multiple consecutive options, or the *Ctrl* key to select multiple independent options. This is useful for larger option lists, where checkboxes would require too much space.
- **Advanced Multi-Select**: Displays two columns of options—the left column displays all the available options, and the right column displays the selected options. Use the arrows between the two columns to move options to or from the selected list. This overcomes the primary weakness of standard multi-select boxes—the tendency to accidentally de-select your options while working with the field.
- **Autocomplete Select**: This is similar to the **Select** box drop-down, but you begin typing a value to have it search for possible matches among the option list. This is useful for single-select fields that have a large number of options.
- **TextArea**: Displays a multi-line box for entering longer text. It will store the content as plain text with no HTML. You may decide the height and width of the box, though it will be expandable by the user.
- **RichTextEditor**: Displays a multi-line box for entering longer text: with the WYSIWYG editor toolbar, as configured in **Global Settings**.
- **Select Date**: Popup calendar widget for selecting a specific date.
- **Select State/Province**: Select one state or province from the list enabled at **Administer** | **Configure** | **Global Settings** | **Localization**.
- **Multi-Select State/Province**: Select one or more states or provinces.
- **Select Country**: Select one country from the list enabled at **Administer** | **Configure** | **Global Settings** | **Localization**.
- **Multi-Select Country**: Select one or more countries.
- **Select File**: Provide a browse/upload file field.
- **Link**: Hyperlinked URL field.

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Proceed with completing the field creation form, entering a default value (if desired and available), providing help text, and determining if the field is required. Note that if you designate the field as required it will impact all administrative forms—not simply forms exposed to the front of your site. When creating frontend forms you will have another opportunity to designate which fields are required (during profile construction).

If you would like this field included in the advanced search tool, designate it as searchable. Typically you will want most of your fields to be searchable, though it's worth considering the question. For fields that are unlikely to be searched, keeping this option off streamlines the advanced search interface.

The last option on the field creation form is to mark a field as view-only. There are two situations where this can be helpful:

- If you are importing data from a legacy system, you may have some fields which you would like to retain in the new system, but would not want to maintain on an ongoing basis. Most often this happens because the legacy fields find a different expression in CiviCRM, such as becoming part of the tags or groups structure. After creating the fields and importing the data you would return and mark this field as View Only. In this way you ensure that the data is available for reference, but users will not add to or edit it.
- **View Only** fields are also helpful if you wish to populate the field with values calculated by hooks or other code. We will discuss hooks toward the end of the book, but for our immediate purposes, understand that they are a way for developers to run custom code at certain times. For example, you might create a custom field called "age" which calculates the age of the contact based on the birth date (a standard field), and the current date. You want the value updated automatically with code every time it is displayed rather than relying on users to manually record the value.

Note that you cannot import data into a field designated as **View Only** using the **Import Contacts** tool. You should leave the field as editable, import your data, and then return and mark it as view-only.

On the subject of importing legacy data, you may also find it useful to initially import and then later completely hide some fields (not just mark as view-only). As with most tools in CiviCRM, you can easily disable custom fields. Doing so retains whatever data is stored in the fields, but completely removes it from the interface.

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Are you interested in understanding how CiviCRM handles custom fields in the MySQL database? Open up your database in phpMyAdmin, SSH, or your preferred database management tool. The creation of a custom group adds a record to the `civicrm_custom_group` table containing your configuration options, and creates a new table called `civicrm_value_[unique text based on group name and id]`. Each custom field adds a record to `civicrm_custom_field` and creates a new column in the appropriate table.

The table created by the custom group will always have an `entity_id` column that is a foreign key to the object's table it extends. For example, a custom group used for individuals will use the `entity_id` to link the custom data record to the `civicrm_contact` table's `ID` field.

This is helpful to know should you ever need to run custom queries on your data. The structure makes it very easy to build relationship diagrams and queries between custom data tables and the records they extend.

Custom data sets and fields are a powerful tool in your CRM strategy. You are likely to find the need to construct them during your initial implementation to meet defined data recording needs, to import legacy data, and throughout your ongoing use of the system as data needs continually evolve.

FPAGM will use custom fields to collect information about the food pantries they serve and businesses supplying food to the organization.

Since the information collected for these two types of contacts are significantly different, the association will define two custom field sets and designate them for use with each contact subtype respectively. This is done by selecting **Organization** as the **Used For** value and choosing the appropriate contact subtype in the multi-select box that appears.

One important thing to keep in mind as it relates to the impact of custom fields on your database structure is that if you migrate your site to a new server, you will need to make sure the additional tables created by custom groups are migrated. In other words, it is not sufficient to export only your data; you must also export the database structure. Importing only the data into a clean installation of CiviCRM on the new server is insufficient as you will be missing the custom data tables from your old database.

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Creating online forms with profiles

Until this point, most of our attention has been spent understanding CiviCRM's administrative interface and customizing/configuring the system to meet your organization's needs. However, the power of CiviCRM isn't fully realized until you begin to collect and expose data to your website.

It's not uncommon for organizations to have very disjointed systems collecting and maintaining their constituent data. Perhaps you have a central database, such as MS Access, that is used by staff to track your members or donors and is stored on your office network. Several staff people may be maintaining spreadsheets with information relevant to their job functions and which they need access to while traveling (when they are unable to connect to the office network). Perhaps your current website has a database where user login access accounts are stored and a list of members is periodically updated in order to have an online directory.

CiviCRM provides an opportunity to bring these disparate data sources together—those used internally on your office network, those which must be accessible remotely, and those which should be exposed on your public or user-accessed website. In doing so, you streamline workflows and improve data integrity.

In CiviCRM, you collect and expose data using profiles. Profiles are basically a collection of fields. You choose settings for the profile and its fields based on how you plan to use it. Profiles may be used to:

- Create forms where you collect information from users, either as a standalone form or as part of a contribution or event registration form

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- Expose fields to logged in users and allow them to edit and save their data
- Display "view-only" fields to logged in users
- Update contact details through a website user account form (Drupal only)
- Create website user account signup forms
- Provide contact record search forms and control what appears in the result list and detail view
- Create alternate search result views in **Advanced Search**
- Perform batch record processing on search results

As a result of their flexibility and diverse ways in which profiles can be used, it is sometimes difficult to grasp the extent of their functionality or see potential uses. As we walk through this section, we will take time to offer suggested uses as you build your website.

You administer profiles through **Administer** | **Customize** | **CiviCRM Profile**. This is where you will create new profiles, manage existing ones, and access the fields associated with each. You can also access several links for exposing profiles directly to users in various ways. We will see other locations in CiviCRM where you may insert profiles into event and contribution forms.

When you first visit this page, you'll notice that several profiles already exist, some of which are marked as **Reserved**. In addition to the uses listed above, CiviCRM uses profiles for several internal functions. Specifically, when a new contact record is created "on the fly", CiviCRM uses the appropriate reserved profile listed here to determine what fields should be made available. For example, if you initiate creation of a new activity from the **New** drop-down field, your record must be associated with an existing contact record (using the **autocomplete** field), or with a new contact record. If the name you type does not exist in the database, a form will pop up allowing you to create the contact "on the fly". That form is controlled by these reserved profiles. The default profiles have only a few basic fields, but you can change that by editing them here. For example, you may decide that every time a new contact is created, several additional fields should be listed, some of which will be required.

Let's briefly review the various settings available when creating a profile and its fields, and the standard selections for each use type.

After clicking on **Add Profile**, enter a **Profile Name** (which will appear at the top of the form when presented on your website). Next, select what it will be used for:

- **Profile**: Used for data collection and search forms

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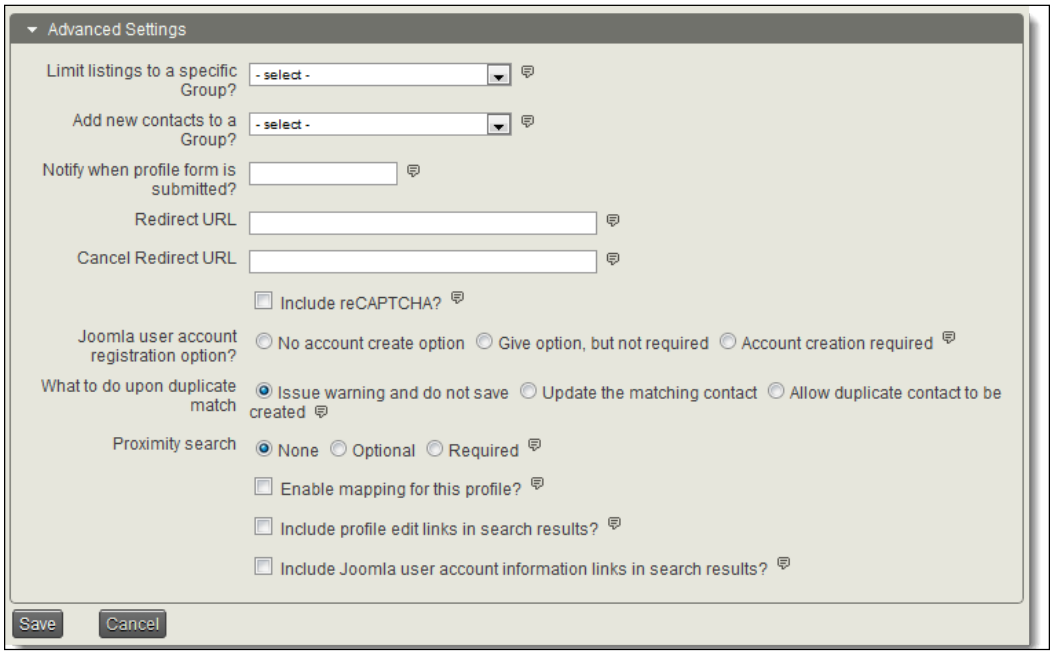
- **Search Results**: Used for advanced search results and batch updates
- **Drupal User Registration**: Fields will be added to the user account registration form (Drupal only)
- **View/Edit Drupal User Account**: Fields will be added to the user account form (Drupal only)

You may return at any time to adjust these settings. As you can see, a single profile could potentially be used for multiple purposes. For the sake of reducing system clutter, it is best to initially only select those options you know you will be using.

Click at the bottom of this form to expand the **Advanced Settings** panel. The options listed here significantly expand the functionality of your profile. Remember that not all options will be applicable for every use of the profile. CiviCRM simply ignores options that don't apply to a specific instance of the profile on your site.

By "instance", we mean the use of a profile for a specific purpose. For example, you might create a profile containing contact address fields that is used for a profile view page on your site and is also used as a search results view on the administrative side. Settings related to search, such as what columns will be in the result list, will be ignored by the first use of this profile. Typically, you are creating a profile for a single use, and in general, this is a good way to think about the process. However, there is no actual limitation in the software as to the number of ways in which a single profile can be used.



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Let's review the options:

- **Limit listings to a specific Group?**: This only applies to profiles used as search forms. Selecting a group from this list will limit the contacts searched to only those included in the group. For example, if you are creating an online member directory, you will first create a smart group for current members and then limit your search profile to this group, so that only members in good standing will be returned in any search using this profile.
- **Add new contacts to a Group?**: This applies to profiles used as contact signup or edit forms, including those used in conjunction with contribution pages and event registrations. When a user completes the form, they will be added to the group you've selected. This provides a great way to trace the source of your contacts or manage mailing lists.
- **Notify when profile form is submitted?**: You can choose to have one or more persons e-mailed when a profile **Create** or **Edit** form is submitted. For multiple e-mails, separate each one with a comma.
- **Redirect URL**: After the form is submitted, you can choose where the user will be redirected. To use this field enter a fully qualified URL (including `http://`). If the field is left empty, the user will be directed back to the profile form with a message indicating a successful submission.
- **Cancel Redirect URL**: Similar to the last field, this is used to redirect the person if they cancel the form. Leaving the field blank returns the user to the profile form and clears the fields.
- **Include reCAPTCHA?**: Captcha is a method for discouraging spam and robots from completing your online forms. The tool displays a graphical representation of letters and numbers, requiring the user to successfully type the characters before the form can be submitted. Before enabling captcha on a profile form, you must first obtain an account at `http://www.recaptcha.net` (you will be directed through Google to create the account). After setting up an account and obtaining a private and public key, enter those values in: **Administer** | **Configure** | **Global Settings** | **Miscellaneous**. Once you've configured reCAPTCHA in the global settings, it will be available to any profile form.

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- **Joomla/Drupal user account registration option?**: Earlier in this section we mentioned that a profile can be inserted into a Drupal user account form. The reverse is also available for both Drupal and Joomla!—you can create and expose a profile form and have the user account fields (username and password) included. You may make user signup optional or required, depending on your needs. This is particularly useful for including in contribution pages and event registrations. For example, you may want to encourage people who are registering for your annual meeting to create a user account for future access to the site. Note that your profile form must include an e-mail address field and user account registration must be enabled in your CMS settings (Joomla!/Drupal).
- **What to do upon duplicate match**: What happens if someone already in your database completes a form on your site? Should a new contact be created? Should the fields be ignored if there is already data in them or should the new data update and overwrite the existing data? Use this option to decide if duplicate contacts should receive a warning, be updated using the existing record, or if a new duplicate record should be created. Note that CiviCRM will use the default **Strict** rule defined in the **Find and Merge Duplicate Contacts** tool (**Administer** | **Manage**) for the appropriate contact type to identify matching contacts. Also note that CiviCRM will always update existing contact records for profile forms embedded in contribution and event registration pages.
- **Proximity search**: If a profile is used for searching, you can enable searches from it for contacts based on how proximate (close) they are to an address. If set to required, users must complete the proximity search fields in order to use the tool.
- **Enable mapping for this profile**: If mapping is enabled and CiviCRM has successfully geocoded the address for a contact, a link to view the location on a map will be included in the search results and on the record's detail view.
- **Include profile edit links in search results?**: This option is a powerful (but dangerous) way to empower sufficiently permissioned users to edit other records in the system through a profile. Since the access to edit contacts is funneled through a profile, you can easily control what records and what fields the user can edit. In Drupal, you will need to permission the user appropriately to access and edit records for this profile. In Joomla!, the user must be an administrative user. When enabled, the search result list will have an **Edit** link added to each record's row.

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- **Include Joomla/Drupal user account links in search results?**: Enabling this option inserts a link to the user's website account page (view only) in the search results. For websites seeking to build a social community, this can help people connect with other users.

After completing the **Settings** form you will be directed to a form where you can define fields for the profile. Remember that your options for **Profile** fields are somewhat independent of the original custom field definition. For example, you can flag a field as **Required** in the profile that is not required in the original definition, or you can add custom text before or after the field to help explain its usage in this particular context.

Profile field settings can be a bit confusing as the options can impact the field display significantly depending on your use of the profile.

The first concept to grasp is the types of fields you can combine together in a profile based on your planned use. As with other parts of CiviCRM, the field selection process involves selecting the type, the field, and then any sub-options relevant to that field. You may add contact, activity, participant (event registrants), membership, and contribution fields to your profile. However, your use of the profile will dictate what combination of field types are allowed. In particular, there are two primary rules dictating usage:

- **Different contact type fields cannot be mixed**. This is the most common mistake for new users. The limitation means you can't construct a profile that includes both Individual and Organization-specific fields, or other such combinations.
- **Participant/Membership/Contribution fields may only be used in profiles used within the associated type of page**. In other words, you can't use these fields with profile view/create/edit/search pages. Profiles containing these fields can only be used within event registration or contribution pages.

If you fail to respect these rules, your profile page will render an error indicating that you have mixed-type fields and you will need to correct them before proceeding.

The field type list contains a **Contacts** option, as well as options for specific contact types and subtypes (**Individual**, **Organization**, and so on). The **Contacts** option includes fields common to all contact types, such as the **Address**, **Phone**, and **Communication preference** fields. The contact type fields are specific to only that type.

After selecting a field, you may proceed to complete the other fields, such as the field label, whether the field is required, view-only, and help text. Note that **View Only** fields will not be included in profile search pages.

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One very important field to configure is the visibility field, which determines how the field data will be controlled. There are three options available:

- **User and User Admin Only**: This is the default option and can be used for fields found in all profile create/edit/view and component pages (events and contributions). It essentially states that the only contact using the form will be the current user (whether they are logged in or not), or in the case of component and profile create forms, whoever the form is being completed on behalf of. For profile edit and view pages where you may be accessing existing data in the system, this option states that the logged in user may only view their own information (and not other contact records). Consequently, this option is the most restrictive and also the most secure. There generally is no need to change this field value unless your profile will be used as a search form.
- **Public Pages**: This option should be selected if you want to expose this field to a search profile either through the search form itself or as part of the resulting records' detail views. This includes profiles used for search results in administrative pages and batch updates. As the name suggests, it indicates that the contact record data may be viewed by contacts other than the logged-in user. For example, John Doe may use a profile search form to look up the address for Janis Smith.
- **Public Pages and Listings**: This option works the same as the previous one, but also includes the ability to hotlink values in the detail view. This is a great way to encourage follow-up searches from your resulting records. For example, let's say you have a custom field called "service types" that is attached to organization records. The field is displayed as a list of checkboxes from which the user selects one or more. After conducting a search and viewing a record, you see that they are associated with three of the services. In the profile form, this field was assigned the **Public Pages and Listings** visibility, which means the three services for this record are displayed and hyperlinked on the detail page. Clicking on one of the services generates a follow-up search based on that value. In this way the user can easily conduct multiple follow-up searches. Later in this chapter we will construct a profile which uses this field and point out how it is displayed and used.

The visibility option for profile fields is not the only way you control access to data through your website, but it is one important way to limit profile field use and should be considered carefully as you build your profile. As a general rule, you can leave the setting as **User and User Admin** unless you are using the profile in a search capacity.

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If you have chosen either **Public Pages** or **Public Pages and Listings** for your visibility option, you will see two additional options appear in the form:

- **Searchable**: Checking this option indicates that the field should be available on search forms. Give some thought to the type of field you're working with when building out search forms. You typically will want only a small number of fields on the search form and several more fields included in the profile for display in the detail view.
- **Results Column**: After conducting a profile search, the user is given a paginated list of all records matching the selected search criteria. From that list, they can click to view the record details or map the contact (if enabled). Select this option to include the field in the result list table. Keep in mind that your horizontal screen real estate is likely to be limited based on the website template/theme you are using. You will only want to include a handful of fields in the search result view.

After completing the form, you may save it and return to the list of profile fields or click on **Save and New** to add additional fields.

Once you've completed adding your profile fields and have returned to the field listing, you can edit, preview, disable, delete, or reshuffle the order of the fields. Returning to the main profile page where each of your available profiles is listed, you'll notice several actions that can be taken with regard to them. In addition to links providing access to the profile fields and profile settings, you may:

- **Preview** the profile in create view.
- **Use Profile-Create Mode**, which sends you to the live profile page in **Create** mode (for collecting new information from users).
- **Disable** or **Delete** the profile.
- Access an **HTML Form Snippet**, which provides code for using the profile in the **Create** view outside the traditional means. The code generated is completely independent of your website, which means it could be used on other websites. Let's say your trade association has a sister foundation established that is used for disseminating scholarships to students interested in the organization's field of study. The two entities (the association and foundation) are separate, but are closely related. You publish a weekly e-mail newsletter and wish to encourage subscriptions through both websites, so you create a profile for this purpose and use the **HTML Form Snippet** code to insert the signup form on the foundation site while creating a standard menu link to the form on your main association site.
- **Copy the Profile**, which facilitates the configuration process when you need to create a new profile that is similar in construction to an existing one.

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If you've read through this section for the first time without having a clear vision for how you want to use profiles, you may be overwhelmed. The challenge with profiles is that they are very flexible and can be used in many different ways, not all of which are immediately clear when you are new to the system. When setting up a profile, you shouldn't be surprised if you need to return to the profile settings several times to tweak the options as you build and test it in various uses.

Profiles in action

Let's take some time now to look at profiles in action. We'll return to our Food Pantry case study (FPAGM) to see how they make use of profiles to meet several data collection and management needs.

Empowering users to update information

As with many organizations, one of the reasons FPAGM chose to implement a web-based constituent relationship management system is to expose real-time data to their members and allow them to edit those details without staff intervention.

Employees of food pantries and food suppliers will have website user accounts that provide them with access to resources unavailable to the general public. Each of these employees will also have a contact record in CiviCRM where their contact details and event registrations are recorded.

Once a user logs into the website, FPAGM wants to provide a link to allow them to review and update their contact details, including the address, phone, and newsletter subscriptions. They begin by constructing a profile with the desired fields. Each of the fields will be pulled from the **Contacts** and **Individual** field lists and will have visibility set to **User and User Admin** since the only person accessing the fields will be the logged-in user.

FPAGM sets several fields as **View Only**, as they do not want the user to be able to modify their value. This will include the first name and last name fields. Locking these down ensures the contact doesn't transfer the record to another user (for example, if an employee leaves a supplier and hands the login details to the new person replacing them), and helps ensure that each record is preserved for historical integrity. If new employees replace existing ones, we want to retain the old record and create a new one rather than rename the existing contact.

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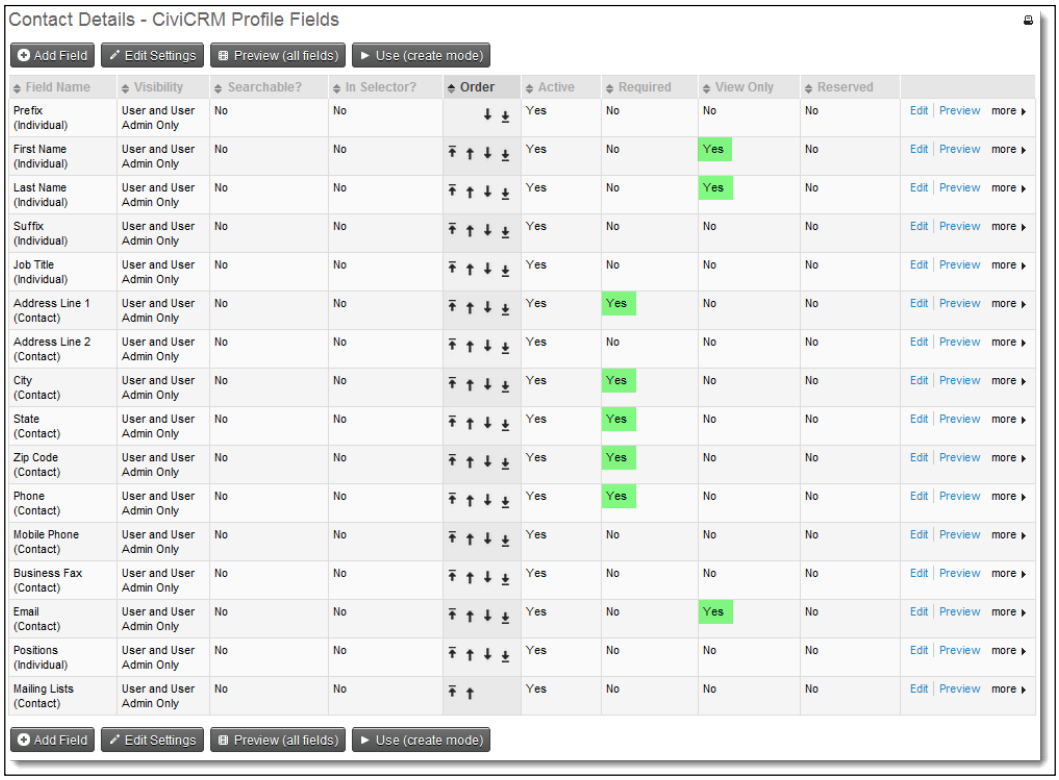
Several fields will also be designated as required to ensure that the association collects and maintains as much complete data as possible. The resulting field list is shown in the following screenshot. Care is taken to ensure the field order presents a logical display of information.



Contact Details - CiviCRM Profile Fields

Add Field | Edit Settings | Preview (all fields) | Use (create mode)

Field Name	Visibility	Searchable?	In Selector?	Order	Active	Required	View Only	Reserved	
Prefix (Individual)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more
First Name (Individual)	User and User Admin Only	No	No		Yes	No	Yes	No	Edit | Preview more
Last Name (Individual)	User and User Admin Only	No	No		Yes	No	Yes	No	Edit | Preview more
Suffix (Individual)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more
Job Title (Individual)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more
Address Line 1 (Contact)	User and User Admin Only	No	No		Yes	Yes	No	No	Edit | Preview more
Address Line 2 (Contact)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more
City (Contact)	User and User Admin Only	No	No		Yes	Yes	No	No	Edit | Preview more
State (Contact)	User and User Admin Only	No	No		Yes	Yes	No	No	Edit | Preview more
Zip Code (Contact)	User and User Admin Only	No	No		Yes	Yes	No	No	Edit | Preview more
Phone (Contact)	User and User Admin Only	No	No		Yes	Yes	No	No	Edit | Preview more
Mobile Phone (Contact)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more
Business Fax (Contact)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more
Email (Contact)	User and User Admin Only	No	No		Yes	No	Yes	No	Edit | Preview more
Positions (Individual)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more
Mailing Lists (Contact)	User and User Admin Only	No	No		Yes	No	No	No	Edit | Preview more

Add Field | Edit Settings | Preview (all fields) | Use (create mode)

Take note of the highlighted values in the **Required** and **View Only** columns. Also note that in many cases we have modified the default label for fields to make them more user friendly and context appropriate. For example, **Postal Code** is changed to **Zip Code**, and the address fields do not contain the location value as inserted by default when you select the field. The **Mailing Lists** field is actually the **Groups** list. You may recall that groups are commonly used to manage mailing list subscriptions. Any groups assigned with a **Public Pages** visibility will be listed when this profile is displayed.

Before proceeding, FPAGM takes a moment to preview the profile and ensure that it is configured as desired. Note that the preview displays the profile in **Create** mode, which will exclude the **View Only** fields (**Create** mode displays a clean form, unfilled with existing data, and consequently, there is no **View Only** information to display).

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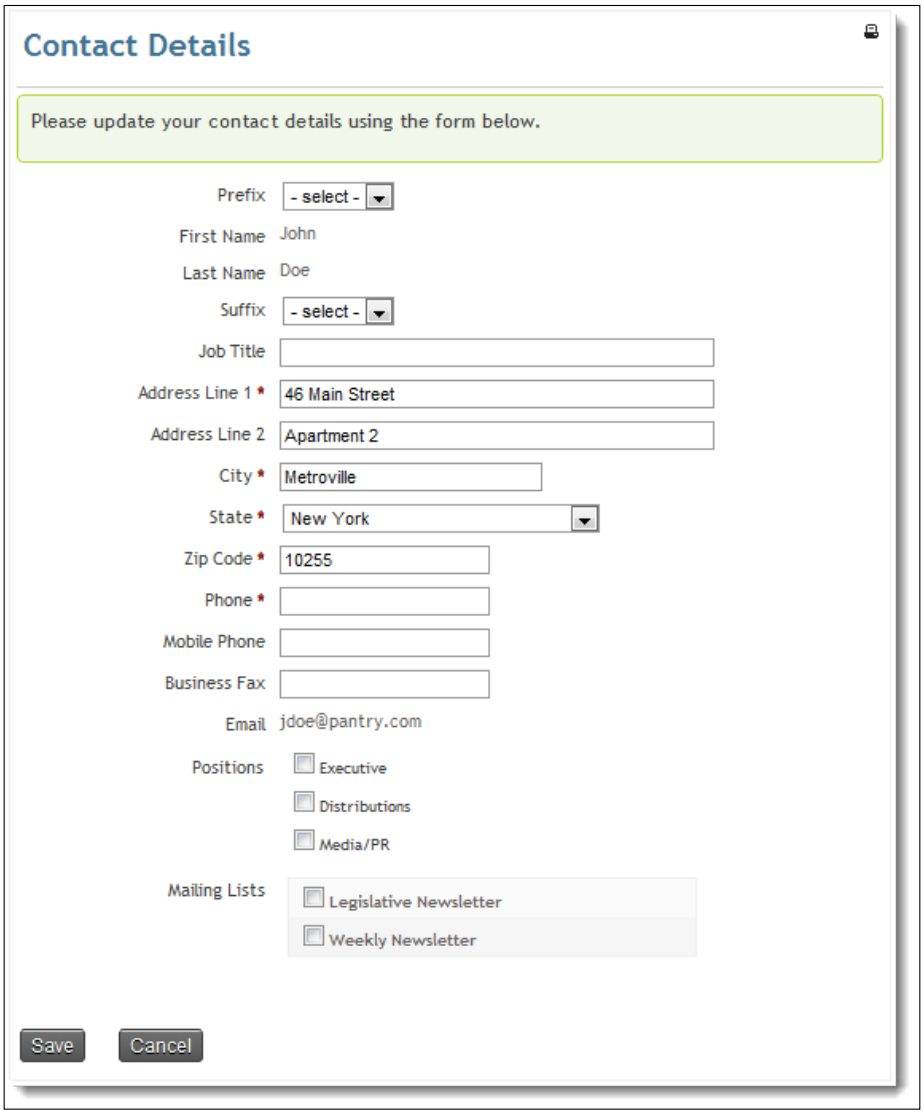
FPAGM's website is built in Joomla!, so they will add a link to this profile to the existing user menu which displays when a user logs in, and set the access level to **Registered** to ensure only authenticated users may access it. We will discuss the various options for exposing profile pages later in this chapter.



The particular user displayed here (**John Doe**) is missing some required information (**Phone**). By using this form along with the required fields, we will be able to encourage him (and other constituents) to provide a full set of contact details for their record.

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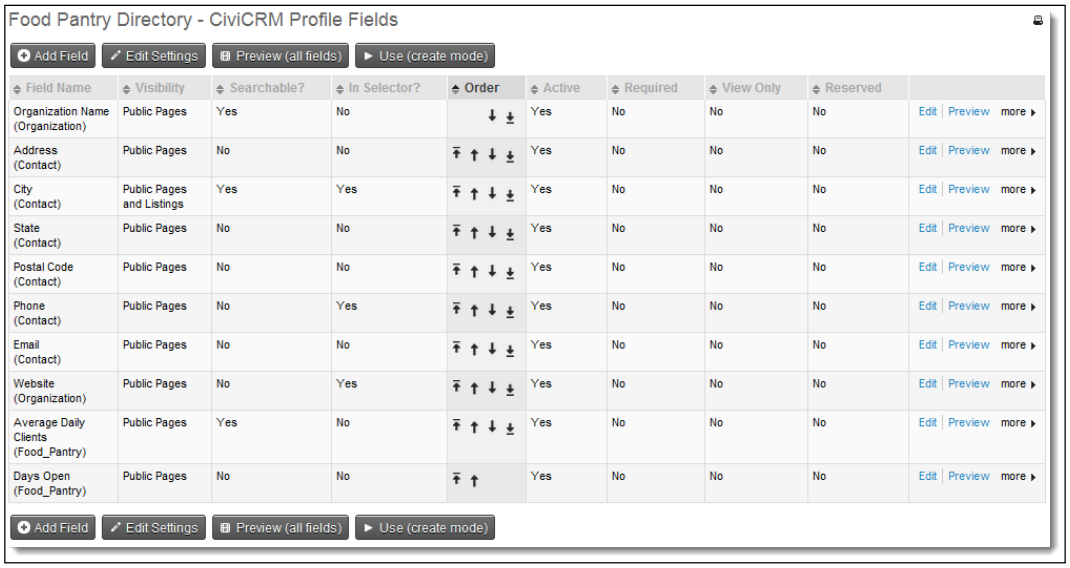
Searching an online directory

As a member of FPAGM, food pantries are primarily looking for two things: support and exposure. The Association exists to serve the needs of the food pantries by serving as a clearinghouse of information and a community to connect food pantries to each other and their suppliers. Pantries also want the community at large to know more about who they are, where they are located, and whom they serve. FPAGM will help achieve this through an online searchable directory.

The directory should only list food pantry members in good standing. It should allow users to search based on address and service fields. To ensure that the profile searches current members, we first create a smart group to retrieve current food pantry members. While creating the profile, we use the **Advanced Settings** to limit the profile to this group.

We then proceed to define and configure the profile fields. The following field list is created:


Food Pantry Directory - CiviCRM Profile Fields
Add Field
Edit Settings
Preview (all fields)
Use (create mode)
Field Name
Visibility
Searchable?
In Selector?
Order
Active
Required
View Only
Reserved
Organization Name (Organization) Public Pages Yes No Yes No No No Edit | Preview more
Address (Contact) Public Pages No No Yes No No No Edit | Preview more
City (Contact) Public Pages and Listings Yes Yes Yes No No No Edit | Preview more
State (Contact) Public Pages No No Yes No No No Edit | Preview more
Postal Code (Contact) Public Pages No No Yes No No No Edit | Preview more
Phone (Contact) Public Pages No Yes Yes No No No Edit | Preview more
Email (Contact) Public Pages No No Yes No No No Edit | Preview more
Website (Organization) Public Pages No Yes Yes No No No Edit | Preview more
Average Daily Clients (Food_Pantry) Public Pages Yes No Yes No No No Edit | Preview more
Days Open (Food_Pantry) Public Pages No No Yes No No No Edit | Preview more
Add Field
Edit Settings
Preview (all fields)
Use (create mode)

Note that only a few fields are designated as **Searchable?**, and only a few are configured for **Public Pages and Listings** visibility (creating hotlinked results).

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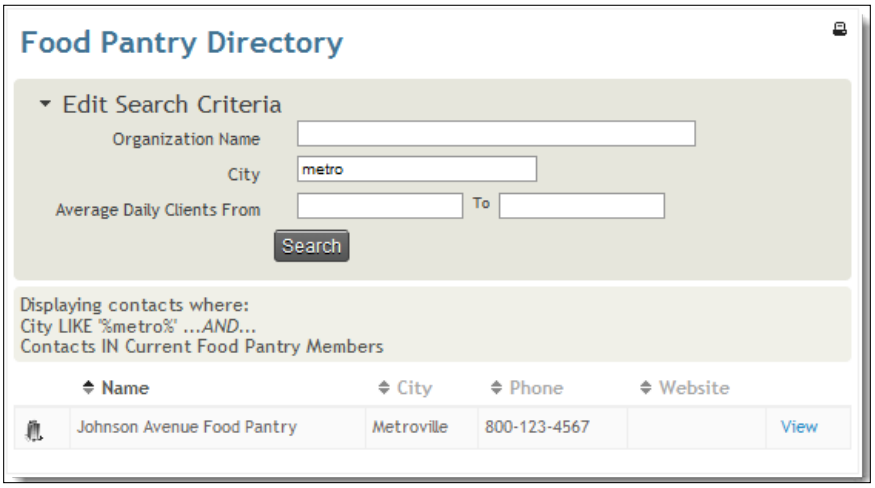
After conducting some testing, FPAGM adds the directory link to the main menu as a publicly accessible search tool.



Notice that the **Average Daily Clients** field is searchable as a value range. This was an option available in the custom field definition.

After conducting a search, we click on **View** to look at the contact details for one of the records returned by the search:

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Take a minute to review the original field settings for this example and compare how the selected options resulted in different searchable fields, result list columns, and the detailed view. For example, note how the **Public Pages and Listings** visibility for the **City** field resulted in a hyperlinked value in the detail view. Clicking that link would trigger a new search based on that value—all contacts in Metroville. While using that option, give a careful thought regarding the usefulness of enabling the follow-up hyperlink. You wouldn't generally hyperlink a phone number or e-mail address, for example, as those are very likely to be unique to each contact record. General address fields such as city, state, and postal code would be good candidates for that feature, while street address would not (as it would only return contacts with the exact same address).

Including profiles in component pages

As discussed earlier in this section, one important use of profiles is in conjunction with event registration and contribution pages (which includes membership sign up pages). By default, both of these types of pages will only require the e-mail address as part of the registration/contribution process. Generally, you will want to include other important fields such as the individual's name, address, and communication details.

We won't walk through the creation of a profile for this purpose, but as you create one, keep in mind that you may include **Participant**, **Membership**, and **Contribution** fields (depending on its usage), in addition to **Contact Details**.

When configuring the event or creating a contribution page you will be given the option of inserting two profile forms in the page; one will appear toward the top of the page, and the other toward the bottom. If you have enabled the multiple contact registration capability for event registrations, you may assign different profiles for these additional registrants to help streamline and simplify the registration process for the end user.

Search result views and batch updates

Most of the time your use of profiles will result in some kind of form or other display on the public side of your website. However, there are two important uses that impact the backend administration of the site.

When conducting a contact search in CiviCRM, the resulting list of contacts contain the contact name, address, e-mail, and phone number by default. Sometimes you may want different sets of fields displayed in the search result list. You can do this by creating a profile to serve as a search result view.

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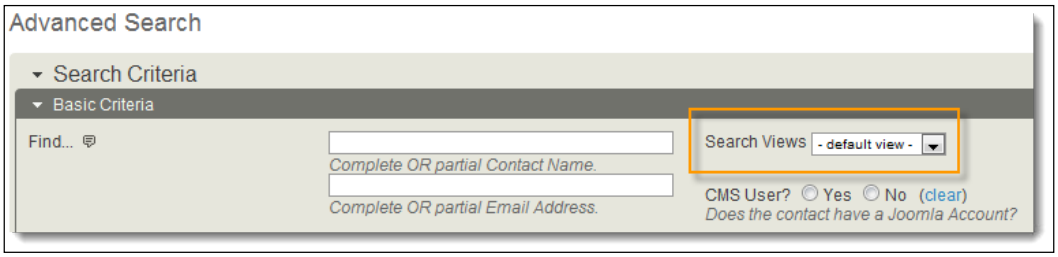
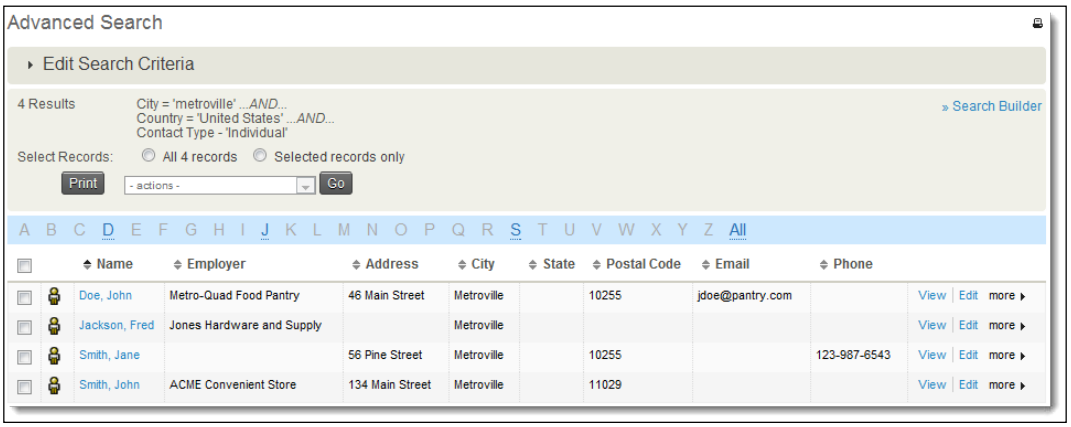
You may select a profile when conducting an advanced search, or select one as the default search view by visiting **Administer | Configure | Global Settings | Search Settings | Default Contact Search Profile.** While using **Advanced Search**, use the **Search Views** drop-down to select your desired profile.



Note that in order to be available as a search view, your profile must have the **Search** option selected in the profile settings.

FPAGM wants an alternative search view that removes the **Country** column and includes the **Current Employer** field. When creating the profile for this purpose, they must select **Public Pages** visibility and indicate the fields which should be in the result column. After conducting a search for individuals located in the city of Metroville and choosing this profile view, users see the following:


Advanced Search
Edit Search Criteria
4 Results
City = 'metroville' ...AND...
Country = 'United States' ...AND...
Contact Type - 'Individual'
» Search Builder
Select Records: All 4 records Selected records only
Print
- actions -
Go
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z All
Name Employer Address City State Postal Code Email Phone
Doe, John Metro-Quad Food Pantry 46 Main Street Metroville 10255 jdoe@pantry.com View Edit more
Jackson, Fred Jones Hardware and Supply Metroville View Edit more
Smith, Jane 56 Pine Street Metroville 10255 123-987-6543 View Edit more
Smith, John ACME Convenient Store 134 Main Street Metroville 11029 View Edit more

FPAGM also wants to make use of profiles for batch updating address fields and communication preferences. Batch updates let you edit selected fields for multiple records at once (up to 100 at a time) and include the ability to copy values from the first record to all subsequent records.

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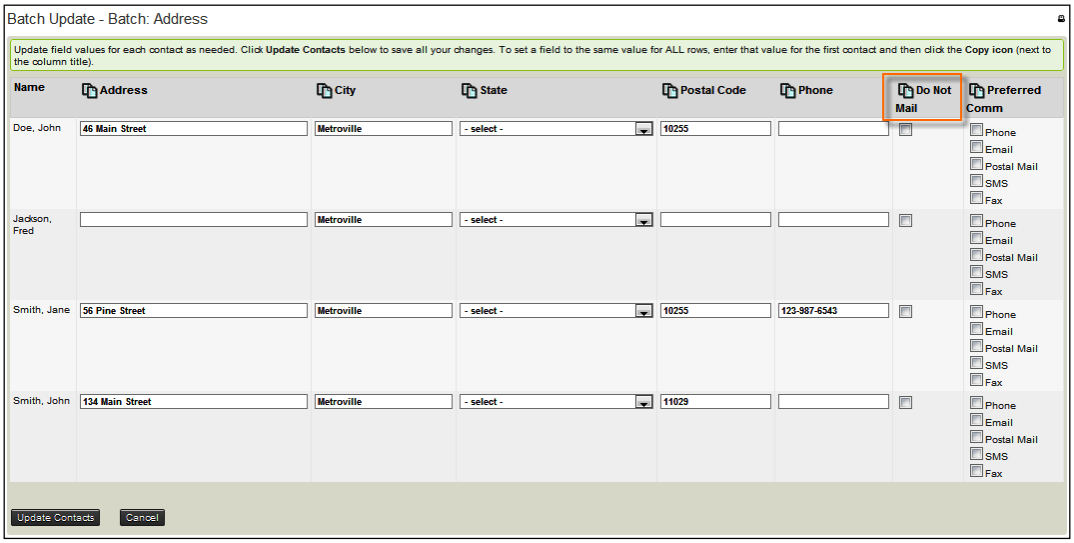
To create this profile, they copy the search profile just made, remove the current employer and e-mail fields, and add the **Do Not Mail** and **Communication Preferences** fields. After running a search they select their desired records from the results list, choose **Batch Update via Profile** from the **Action** drop-down, click on **Go**, select the new profile, and then click on **Continue**.



Notice the highlighted icon and mouse-hover help text that lets you copy the first row's column value to all rows in the table. This is an incredibly powerful feature of the batch update tool. FPAGM might decide that all of these contacts should not be mailed and may prefer communication via e-mail. They select the appropriate options for the first record and copy to all other records with one click.

Exposing profile pages to your website

In the earlier examples we briefly mentioned having exposed the directory search and user contact detail profiles to the FPAGM Joomla! website using menu items. However, there are other methods to consider while displaying profiles and different ways to go about doing this, whether you are using Joomla! or Drupal as your CMS. Let's walk through the Joomla!/Drupal-specific methods first, and then review some configuration options available to both.

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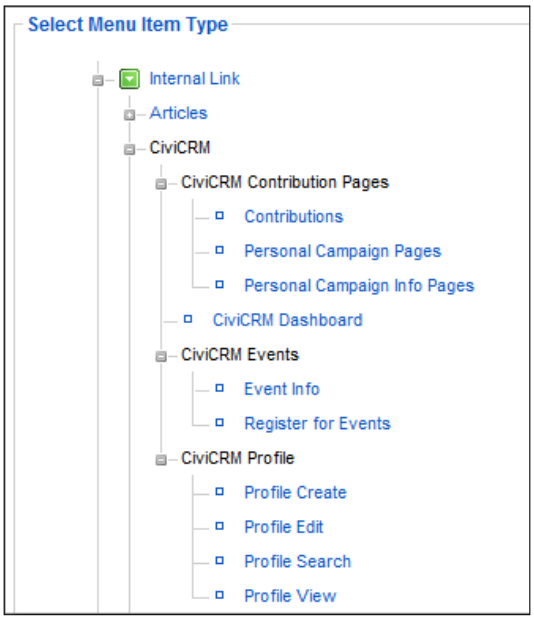
Joomla!

If you are already a Joomla! user, you are aware that the primary method for creating page links is through menu items. In addition to providing an interface for selecting various configuration options for pages, menu items also provide access to module configuration. Modules are the blocks of content and functionality that are found in various positions (as defined in your template) around the page. They may include menus, footer text, login forms, recent content items list, and other such tools.

As a result of the connection between menu items and modules, you will often want to create links to CiviCRM resources through the menus. To do this, select your desired menu from the admin navigation bar and click on **New** to create a menu item. After selecting CiviCRM, you are given a number of sub-options for the type of page you wish to create. Our focus will be on the **Profile** options.

If you want the benefit of building links to CiviCRM resources through menus but don't actually want the menu visible on your website, create a new menu called "Link Setting Menu" and leave the corresponding module in the **Joomla Module Manager** disabled. In Joomla!, the menu configuration is separate from its visibility/display on your site – which is handled through the Module Manager. Your menu may exist and have valid, accessible links, but not actually be visible on your website. In this way, the menu manager serves more as an internal-link manager.



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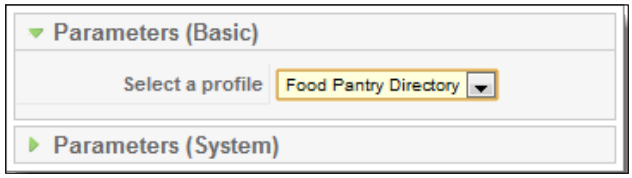
As you can see from the preceding screenshot, you have four options for exposing profiles: **Create**, **Edit**, **Search**, and **View**. After selecting one of these options, you choose the profile you wish to expose:



Since all of the configuration settings for the profile and its respective fields are handled in CiviCRM, you only need to choose which profile to display and in which desired method.

There are, however, some additional display options that can be passed to the profile through URL variables. We will discuss them later in this section. If you wish to implement these parameters through a menu item, use the **External Link** menu option that lets you set the link through a full URL.

Joomla!'s module management options are somewhat limited—you can assign modules to all menu items, no menu items, or selected menu items. There are several Joomla! extensions that can significantly expand your configuration options for modules. If you are looking for more options, take a look at the Advanced Module Manager (`http://extensions.joomla.org/extensions/administration/admin-structure/10307`) that lets you assign modules to specific components, sections/categories, articles, templates, languages, user, and other options. It even allows date-based, URL-based, and script-based (PHP-based) controls.

In addition to wanting to add URL variables to profiles through menu items, you will inevitably want to insert links to profiles directly in your content items (articles and modules) without the need to build menu items first.

To do this, append one of the following URL strings to your website root domain, replacing "N" with the ID of your profile (visible in the profile list):

- **Create**: `index.php?option=com_civicrm&task=civicrm/profile/create&reset=1&gid=N`

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- **Edit**: `index.php?option=com_civicrm&task=civicrm/profile/edit&reset=1&gid=N`
- **Search**: `index.php?option=com_civicrm&task=civicrm/profile&reset=1&gid=N`
- **View**: `index.php?option=com_civicrm&task=civicrm/profile/view&reset=1&gid=N`

For example, our FPAGM directory search page could be accessed at `http://fpagm.usingcivicrm.com/index.php?option=com_civicrm&task=civicrm/profile&reset=1&gid=8`.

After constructing your link, be sure to test it on your website and confirm that it is displaying as expected.

Joomla!'s native **search engine friendly** (**SEF**) option will correctly handle the initial link to a CiviCRM resource (subsequent pages are rebuilt as standard URL strings). If you are using a third-party SEF extension, be sure to test your CiviCRM pages thoroughly to ensure compatibility.

Drupal

Links to CiviCRM profiles within Drupal will always be constructed through URL links to CiviCRM. These may be added as menu items or as links from within the content of a node. You can use either absolute or relative addressing for links. For absolute links, append one of the following relative URLs to the base URL of your Drupal site including a trailing slash (for example, `http://yourdomain.org/`), replacing "N" with the ID of your profile (visible in the profile list):

- **Create**: `civicrm/profile/create&reset=1&gid=N`
- **Edit**: `civicrm/profile/edit&reset=1&gid=N`
- **Search**: `civicrm/profile&reset=1&gid=N`
- **View**: `civicrm/profile/view&reset=1&gid=N`

Drupal users may also configure permissions for accessing profiles. Use Drupal's **Access Control** tools to determine which roles can access profile pages and other CiviCRM forms (such as contribution pages and event registrations):

- If you want **Anonymous** (not logged in) visitors to access profile pages, grant the profile listings and forms permission to the **Anonymous** role
- If you are using custom fields in your profiles and want anonymous visitors to access the form or page, you also need to grant **Custom Data Access** to the **Anonymous** role

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If you are using a profile for user account signups, you will need to configure permissioning as described previously. However, if you do not need anonymous access, you can restrict profiles to specific roles, as needed.

You can further control access to specific profiles for subsets of your users using CiviCRM's **Access Control Lists (ACLs)**.

Additional fine-grained access (for example, exposing profiles to anonymous users by default, but restricting access for specific profiles) can be accomplished with functions added to your Drupal theme. Visit the CiviCRM online documentation for more examples and sample code: `http://wiki.civicrm.org/confluence/display/CRMDOC/Linking+Profiles`.

Additional options through URL variables

CiviCRM provides several additional options for refining profile display using URL variables. These parameters should be appended to the create/edit/search/view URL you've selected.

- `&force=1`: If your profile is configured to limit results to a group, this option will display the group list when the profile search page is first opened (by default, search pages open to just the search form). This option only applies to search profiles.
- `&search=0`: This option will hide the search form for search page profiles. Used in conjunction with the previous option, you can create a profile page that displays members of a group with no searching options.
- `&field_name=value`: Use this option in conjunction with the `&force=1` option to return a filtered list of results for your search and listing page. Multiple filters may be applied, if desired. For example, to return a list of records in New York, append: `&state_province-Primary=1031`. Note that the field must be present in your profile definition as a public user and listing field. If you are uncertain what the field name is you wish to filter on, view the search page source in your browser and identify the form field name. You can also retrieve the field value for select/checkbox/radio button fields, such as the numeric value of states in the example above.
- `&map=1`: Use this option to display a map by default for the result set. Note that you must have the profile configured to have mapping enabled (under **Advanced Settings**).

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If you are using CiviMail to conduct broadcast e-mails from the system, there is a special `checksum` token that can be used while sending links to profile pages. Tokens are used in CiviMail to replace values unique to each contact record when the e-mail is sent. In essence, they allow you to do merge mailings with e-mails. The checksum token is a unique value created for each contact when the mailing is sent out. By appending the checksum token to your profile URL string, recipients can click the link and have the profile form loaded with their contact information pre-filled, even if they are not logged in to the site. We will cover CiviMail capabilities in more detail later in the book.

When using the checksum feature, the profile URL should have the following appended to it: `&id={contact.contact_id}&{contact.checksum}`. When CiviMail sends the e-mail it inserts the user's contact ID and unique checksum value.

If you find that your constituents are not accustomed to logging in to your website to update their contact information through a profile edit form, you may find it useful to e-mail them with the link to the edit form. They can access the page without logging in and can interact directly with their contact record. Note that the checksum value expires seven days after sending the e-mail for security reasons. While this improves security, there remain certain risks while using this feature. The link constructed by the checksum provides a gateway to the user's data (controlled by the profile) without requiring them to log in. That means if they forward the e-mail to someone, the recipient would gain access to their contact record (within the seven-day access window).

Importing contact and activity data

Profiles provide excellent tools for empowering constituents to work with their own record or to construct simplified data entry forms for your organization staff. However, quite often you are working with a large number of contact records that must be added to your system, which may be too many to efficiently enter manually through a profile form.

It's also very likely that your CiviCRM implementation project will involve some migration of data from an existing legacy system. Even if you're a startup not-for-profit, you are likely to have some contact records obtained from an external source that will seed your CRM database.

CiviCRM provides some powerful interface tools to import records from comma separated values (CSV), files, or from a recordset specified by an SQL query. Even with a very powerful interface, there will be some work to do with your existing data to prepare it for import.

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Let's take a moment to review the import interface and then retrace our steps to understand the data preparation concerns involved in importing. CiviCRM provides tools for importing contacts, activities, contributions, membership, and event registration records. Our concern in this section will be contacts and activities.

Contacts import

To access the contact import tool, browse to **Contacts** | **Import Contacts**. This tool consists of a four-step wizard where you will upload your file, map the import file to the existing CiviCRM fields, review the mapping and choose to add contacts to a group or tag, and then complete the import with any subsequent notifications about the data.

In the first step you will choose to upload either a `csv` file or connect to a database through an SQL query. In most cases you will be working with a `csv` file. If you choose to construct an SQL query for retrieving the data, the database must reside on the same server and the database user configured in your CiviCRM installation must have sufficient permissions on that database. In either case, CiviCRM will retrieve the data and allow you to map the fields to CiviCRM fields.

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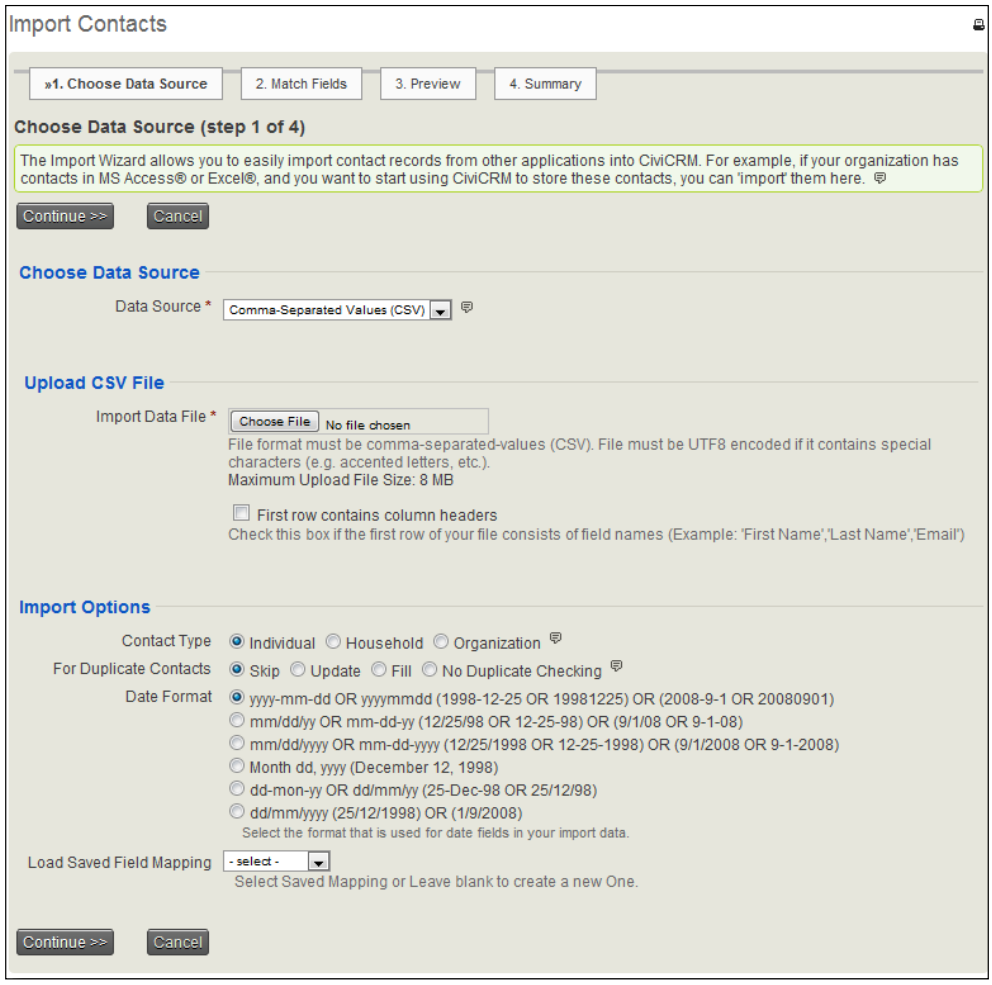
Import Contacts
»1. Choose Data Source
2. Match Fields
3. Preview
4. Summary
Choose Data Source (step 1 of 4)
The Import Wizard allows you to easily import contact records from other applications into CiviCRM. For example, if your organization has contacts in MS Access® or Excel®, and you want to start using CiviCRM to store these contacts, you can 'import' them here.
Continue >>
Cancel
Choose Data Source
Data Source *
Comma-Separated Values (CSV)
Upload CSV File
Import Data File *
Choose File
No file chosen
File format must be comma-separated-values (CSV). File must be UTF8 encoded if it contains special characters (e.g. accented letters, etc.).
Maximum Upload File Size: 8 MB
First row contains column headers
Check this box if the first row of your file consists of field names (Example: 'First Name','Last Name','Email')
Import Options
Contact Type
Individual
Household
Organization
For Duplicate Contacts
Skip
Update
Fill
No Duplicate Checking
Date Format
yyyy-mm-dd OR yyyymmdd (1998-12-25 OR 19981225) OR (2008-9-1 OR 20080901)
mm/dd/yy OR mm-dd-yy (12/25/98 OR 12-25-98) OR (9/1/08 OR 9-1-08)
mm/dd/yyyy OR mm-dd-yyyy (12/25/1998 OR 12-25-1998) OR (9/1/2008 OR 9-1-2008)
Month dd, yyyy (December 12, 1998)
dd-mon-yy OR dd/mm/yy (25-Dec-98 OR 25/12/98)
dd/mm/yyyy (25/12/1998) OR (1/9/2008)
Select the format that is used for date fields in your import data.
Load Saved Field Mapping
- select -
Select Saved Mapping or Leave blank to create a new One.
Continue >>
Cancel

If you are importing from a CSV file there are a few things to keep in mind:

- There will be a maximum upload file size depending on the configured PHP settings for your server. The file size limit will be listed in the notes under the upload box.

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- The number of records CiviCRM will be able to upload and process through this tool will largely depend on the resources and settings of your server. If you are on shared hosting or a low resource VPS, you may find that you need to split your import file into smaller chunks (less than 1000 records) in order to process the import. If you have your own server or high-resource VPS, you may want to increase the PHP timeout and memory limit significantly. If the site is not live or you are not experiencing much site traffic, you could consider setting the timeout value to zero, which will prevent it from timing out altogether. Be sure to return it to a proper setting after conducting your import.
- The best format for importing data is UTF-8. If your data has special characters, this format is required. If you need to import data from a different format you should visit **Administer | Configure | Global Settings | Localization**, where you can configure an alternate **Legacy Encoding**. By default, CiviCRM will have the Windows-1252 format configured for this setting (used by MS Excel). Wherever possible, use UTF-8 as it provides the greatest data integrity.

Before you proceed with the import process, back up your data. Should the import script run into problems, timeout, or you inadvertently assign data to an incorrect field, you will want to have a reliable backup for restoring your existing data and re-implementing the import:

1. After browsing to select the file for upload, indicate if the first row of your data contains column headers. You will want to use column headers when possible as it will greatly assist your field mapping step. Then review the import options.
2. When importing contacts, you may only import a single contact type at a time. In other words, your import file is not allowed to have a mixture of organization and individual records, or individual and household records. If your data has mixed contact types, you will need to separate the records into different files or queries for each type represented.
3. Select how duplicate records should be handled on import. CiviCRM will use the default **Strict** rule for the appropriate contact type found in **Contacts | Find and Merge Duplicate Contacts**. There are four options available; give some thought to your existing data and import data before you select your option. The options are as follows:
    - **Skip**: The default behavior, **Skip**, will alert you about any matching records, produce a report which can be downloaded, and when processing the records, will completely skip the matched record.

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- **Update**: When a duplicate match is found, the data in the import file will update (overwrite) the existing data or fill the fields if no existing data is present. The update option will not affect the fields not included in the import file. Note that this option will not overwrite existing data with blank data from the import file—it preserves the existing data in such cases.
- **Fill**: The import data will only write to a field if no existing data is present. If the field has a value, it will be skipped during import.
- **No Duplicate Checking**: Records are imported, irrespective of the existence of matching records.

4. If your import file contains date fields, select the format for the fields. Note that all the date fields in your import file must be formatted in the same way and the data must be consistent throughout. This is often an area where you must do some scrubbing with your existing data before importing.
5. For sites configured for geocode mapping, you may choose to do a mapping lookup on import. This option should only be used for small data sets as it takes significant time for your server to communicate with your mapping provider for each address imported. If you are importing a large set of data, you will need to run the `/civicrm/bin/UpdateAddress.php` script from the command line or URL after importing. That script is better suited for large scale mapping lookups.
6. In the second step of the **Import** wizard, you will map the import fields to CiviCRM fields and will be given the option of saving the import mapping for future use. Using a saved mapping is particularly helpful if you've had to slice your data file into smaller chunks in order to process the import, if you regularly import records from a common source, or if your data is dirty and the import might fail or need to be rerun. Once one mapping is saved in the system, you will see an option available for selecting that mapping on the first step of the import wizard. Don't worry; if your import file differs slightly from a previous mapping, you will still have opportunity to review and modify the mapping before proceeding with the import.

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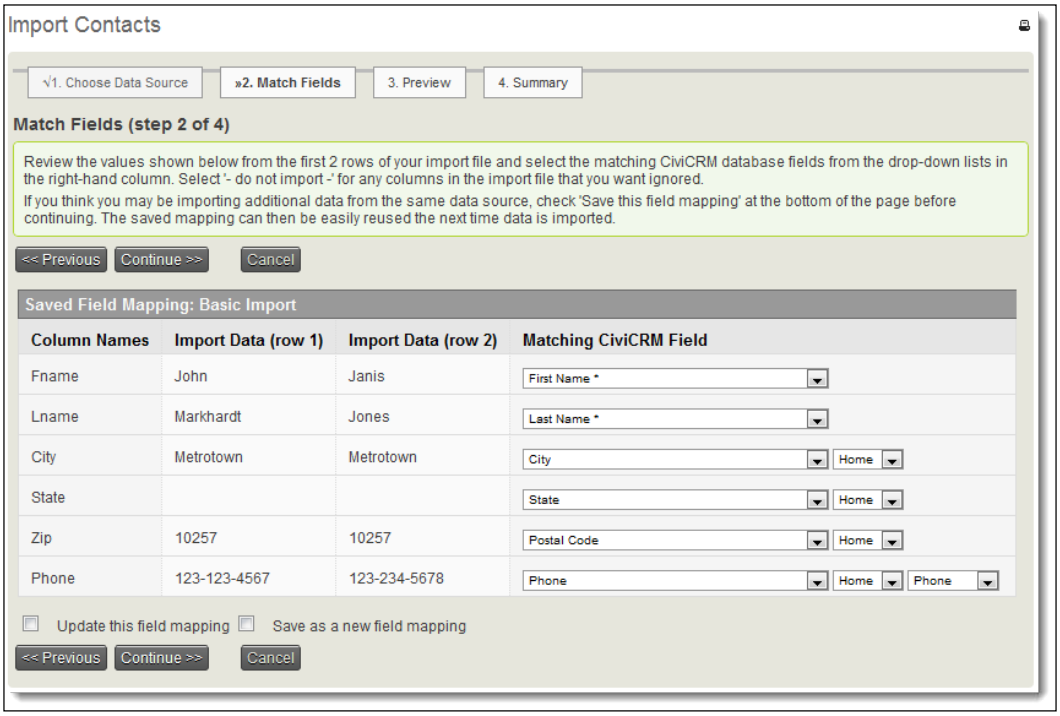
7. After completing this form, proceed to step two, where you will map import fields with CiviCRM fields. The following screenshot demonstrates a sample mapping:



8. When CiviCRM first loads the file, it attempts to map the fields for you. You'll need to review and complete the mapping. In the following step you'll have opportunity to review the mapping and be notified if there are any initial errors in the import file. If there are errors, CiviCRM will provide a link to download a `CSV` file containing the rows with errors and a description of the error. In most cases, the errors will be due to an invalid value, such as a malformed e-mail address or a value that does not match an option for a field.
9. After reviewing the errors file, you may choose to correct the errors, return to the first step, reload it and continue, or proceed with the import and handle the errors separately. This step also provides the option of adding the contacts to a new or existing group, or a new or existing tag.

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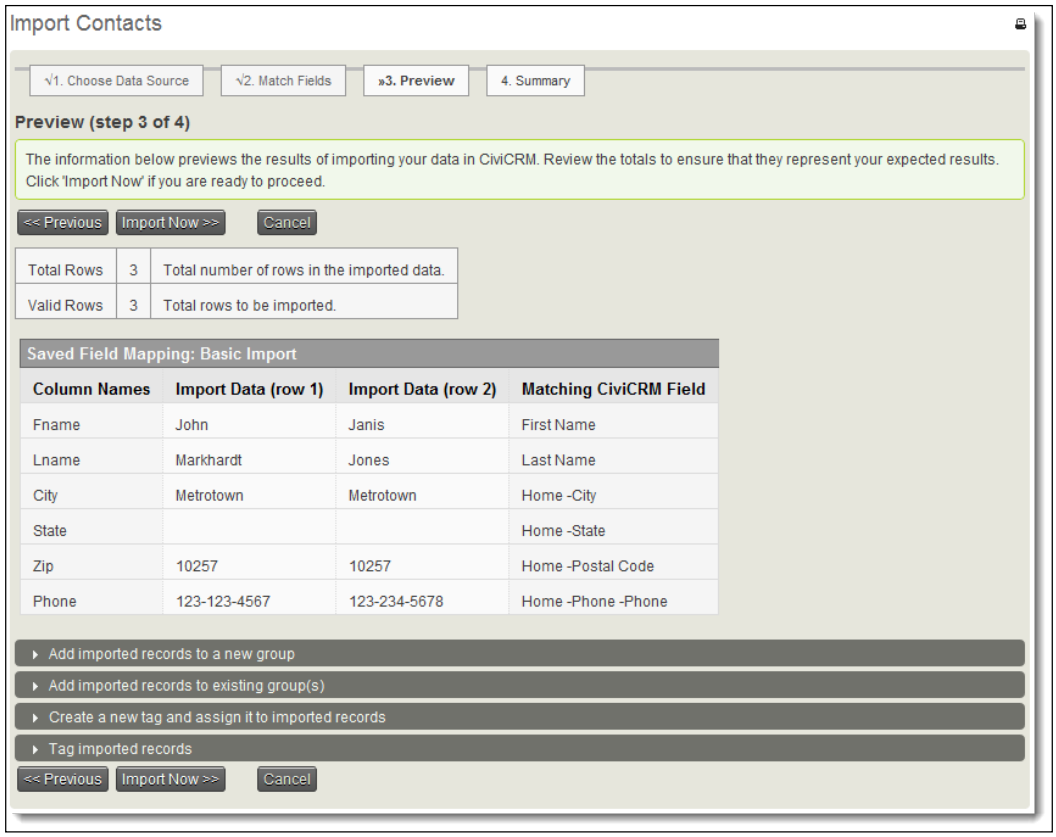
Import Contacts
√1. Choose Data Source
√2. Match Fields
»3. Preview
4. Summary
Preview (step 3 of 4)
The information below previews the results of importing your data in CiviCRM. Review the totals to ensure that they represent your expected results. Click 'Import Now' if you are ready to proceed.
<< Previous
Import Now >>
Cancel
Total Rows 3 Total number of rows in the imported data.
Valid Rows 3 Total rows to be imported.
Saved Field Mapping: Basic Import
Column Names | Import Data (row 1) | Import Data (row 2) | Matching CiviCRM Field
Fname | John | Janis | First Name
Lname | Markhardt | Jones | Last Name
City | Metrotown | Metrotown | Home -City
State | | | Home -State
Zip | 10257 | 10257 | Home -Postal Code
Phone | 123-123-4567 | 123-234-5678 | Home -Phone -Phone
Add imported records to a new group
Add imported records to existing group(s)
Create a new tag and assign it to imported records
Tag imported records
<< Previous
Import Now >>
Cancel

10. Adding your imported records to a tag or group is an excellent way of tracking when the import took place or what was the source of the data. It can also prove useful for post-import data integrity comparison or to identify what records were imported during a partial/failed import.
11. If you are ready to proceed, click on **Import Now** to begin the import and monitor its progress. Depending on which option you chose for the duplicate record setting, you might receive a message indicating that there were duplicate records skipped during the import. You will be provided a downloadable `csv` file where you can review the duplicate records.

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Activities import

The activities import is accessed through the **Contacts** menu and will walk you through a similar four-step wizard. The most significant difference is that your imported records must connect with existing contact records. In other words, you cannot *create* associated contact records as part of the activity import; the activities must be imported to existing contact records.

The connection to existing contacts can be made by including the internal contact ID or external identifier in your activity import file. Using those fields ensures the most reliable connection with contact records, as both must be unique values in the system. CiviCRM can also connect records using the default strict dedupe rules (which by default will be the e-mail address).

The **External Identifier** field is intended for storing unique IDs from the database system you are migrating from. It can be particularly useful when you have core contact data as well as related record data (such as activities) that you are importing from that legacy system.

Imported activity data must also include a column containing the activity type, which must correspond to one of the types configured in CiviCRM. If you have not done so, visit **Administer** | **Option Lists** | **Activity Types** to review the existing types and add new ones as needed.

Activity imports must be done with `csv` files (the SQL option we saw with the contact import is not available to activity import), and you will not have any dedupe processing. If an import errors file is returned, it is likely to contain unmatched records as well as invalid values. Unmatched records are those for which no matching contact was found within the existing contact records.

Tips for preparing your data

While CiviCRM may facilitate the actual import process, the hard work comes with preparing your data for import.

You should begin by taking time to scrub your data. That will involve removing old records you don't want to clutter your new system with, ensuring valid values for fields such as e-mail and website, creating consistent values for any fields using option values, and generally reviewing your data to ensure it is as clean and well-ordered as possible.

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Depending on how your legacy system handled individuals, households, and organizations, you may need to do some work to split your data into subsets of records based on their contact type. Remember that you can only import a single contact type at once when using the CiviCRM import tool. That being said, there are some exceptions, or rather clarifications, to that rule.

When mapping your contact import, note the series of **Related contact info** fields toward the bottom of the field list. These fields will allow you to import data to the primary contact type (for example, **Individuals**) while inserting data into related records. If the related record does not exist, CiviCRM will create it and then build the relationship.

This is not the most efficient way to handle imports, and if you're not careful, can inadvertently create unintentional related records. However, for imports with only a few fields to be inserted in the related record, it may be useful. Also be aware that if your imported data has empty values for the related record fields, CiviCRM may create the related record anyway (with empty data). This will require some cleanup in the system after the import.

The preferred method is to import records for one contact type and then import the related record. For example, you might import all your organization records and then import individuals using the related fields to match on the organization name.

After completing your contact imports, you may want to run a dedupe search and merge duplicate records. Despite your best efforts, duplicate records are bound to show up, especially after an import. What is great about the CiviCRM merge function is that you can easily combine related records. For example, if ACME Company and ACME Co. are the same firm, each may have related records in your legacy system (for example, contributions, activities, and relationships). When you merge the two records, those related records will be combined together in the resulting merged contact. Handling the data merge from within CiviCRM can reduce the pain and annoyance of trying to track down and merge the various related records in your previous system.

As noted above, take database backups before you begin importing and at regular intervals throughout the process. You will want a path for reverting to a previous dataset should something go wrong.

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Migrating to a production server

One common question involves how to best migrate your data from a development or staging server to your production server. Unfortunately, there's no "one-size-fits-all" answer to that question. Your internal workflows and the general nature of your system will dictate the best method available.

Understand that currently there is no convenient way to merge two CiviCRM databases. If you are doing a large import into a staging server, you will need to identify and export any changes to your production database before deploying from your staging server. The change logging that is being introduced in version 3.3 may provide some support for these types of needs.

The CiviCRM tables found in your database are very portable. There are really only two that may need to be reset or cleared out when moving the database: the `civicrm_domain` table that contains directory and URL settings that may change once you've migrated to a new server, and the `civicrm_uf_match` table that connects your CMS users to CiviCRM contacts. With the domain table, you may need to set the `config_backend` field to null in order to force CiviCRM to reset the values, and the `uf_match` table may need to be emptied in order to force new matches with the existing CMS users. In addition, you should truncate the various cache tables to ensure that new content is being generated from the new location.

For a full discussion of migration steps and troubleshooting tips, see: `http://wiki.civicrm.org/confluence/display/CRMDOC/Moving+an+Existing+Installation+to+a+New+Server+or+Location`.

Summary

In this chapter we:

- Configured custom data sets/fields and began to understand their many uses
- Created profiles in order to collect fields for various uses
- Implemented a profile search and edit form, demonstrating the capabilities for exposing CiviCRM data to your website visitors and users
- Reviewed the contact and activity import process, helping you migrate data from previous legacy systems to your CiviCRM database
- Touched on key considerations when migrating from one server to another

Looking ahead to the next chapter, we will look at communicating more effectively using CiviMail, CiviCRM's broadcast e-mail system, and looking holistically at the tools available for managing your contacts with a view toward communicating better with them.

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6
Communicating Better

Central to the success of your organization is its ability to communicate effectively. Though CiviCRM doesn't replace the hard work of crafting content and strategies, it does provide powerful tools to facilitate your communication efforts. This chapter begins by briefly reviewing how your communication efforts can improve your constituent relationships. We then outline how to:

- Communicate better
- Send e-mails to one or more constituents
- Print address labels
- Organize constituents into groups for bulk mailing
- Send a bulk e-mail
- Set up a template for bulk e-mails
- Customize the templates for system workflow messages
- Record e-mails sent to constituents from your normal e-mail client

If you're just interested in the mechanics of how to use CiviCRM to communicate with constituents, feel free to skip the next section where we discuss principles and concepts of effective communication.

How to communicate better

CiviCRM can assist your organization in sending, receiving, and tracking online and offline communications, but it is up to you to create an appropriate communication plan that fits your CRM strategy. Ideally, you will communicate in ways that will:

- Effectively and efficiently achieve your organization's mission
- Respond to the interests of the different types of constituents in terms of topic, treatment, tone, and timing

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- Align the communication to its call to action
- Reinforce your brand

Aligning efforts with objectives

Your plans to communicate with constituents should relate to your plan to achieve your organization's mission. Usually, organizational goals are achieved both directly and indirectly through communications: serving clients, educating and persuading people, raising the profile of your organization within certain target groups, increasing event attendance, recruiting new volunteers, or generating new donations from new target markets. Make sure your communications efforts are directed appropriately. Do you need to improve the number of subscribers at the top of your funnel through reaching new people and soliciting new funds, or is it more important to improve the conversion rate of event attendees into volunteers, thereby increasing relationship depth and constituent involvement? Your strategies and efforts should directly relate to the organizational goals and objectives you've defined.

Topic, treatment, tone, and timing

Non-profits benefit from having a variety of communication products and channels to suit the interests of their constituents in terms of topics and timings of communications. However, the treatment you give your topics—condensed current development or thorough backstory and analysis—creates a certain persona for your organization. The tone you use is also part of the "voice" of your organization's persona, which may be academic, breezy, mocking, or earnest.

You need to match your resources with what is achievable in terms of treatment and timing. Starting out with a single newsletter appearing once a month is probably better than trying to put one out once a day. But, if your aim is to be rapidly responding to news cycles, putting out a crisp short piece a day instead of a multi-page monthly newsletter might be a better choice.

Every constituent in your system will have taken some particular step to first interact with your organization. After becoming aware of your organization through a web search, through hearing one of your volunteers or staff speak at an engagement, or through some other entry point, the next significant step on a ladder of engagement usually consists of opting in to receive regular communication from your organization. Though every organization is different, this regular communication normally consists of summarized information of general interest, such as news about your organization, industry, profession, or subject matter that drives the vision of your organization. This initial "push" communication might be followed by "pull" communication, such as an organizational Twitter account, Facebook fan page, or an RSS-friendly blog.

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Perhaps the most common form of communication by non-profits today, and our focus in this chapter, is bulk-email products that constituents may subscribe to. These could be monthly newsletters, daily updates, time-sensitive communication such as urgent action alerts, notifications of new publications, or other content of interest to users. As constituents move up the ladder of engagement, your CiviCRM system will know more about them, providing you tools to more effectively target contact segments and personalize the communication content and calls to action they receive.

The kind of material you distribute will determine who signs up and remains on your list. Make sure that the content of your communications and its "voice" is appropriate: Is it analytical or anecdotal? Is it authoritative or casual? You may publish dry announcements for an organization that is a clearing house on changes in labor law, narratives from an opinionated person for a homeless shelter, or a quirky gossip column for a creative sector association. Each speaks in a tone and with content that may resonate with its intended audience.

Repurposing content for different channels helps stretch your resources further. Let's say your organization puts out a few major research reports a year. You might want to:

- Distribute a press release
- Author a blog entry about it
- Mention it on your own social media channels
- Post about it into allied channels
- Include a summary or a couple of extracts in your newsletter(s)
- Hold an event where the authors present the work and have a discussion

All this could be done in addition to sending out an announcement to people who have specifically asked to receive notifications of new publications. Find ways to extend the reach of your work through multi-purposing content.

Take advantage of automated communications to cross-market your organization's activities, services, and news. There are a number of places where CiviCRM automatically sends out messages in response to a user's action, such as an event registration confirmation e-mail or donation receipt. You can customize the templates used to produce automated messages. These include confirming event sign-ups, thanking people for contributions, and notifying them when their volunteer sign-up preferences have been received with thanks.

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Tokens, which are merge field placeholders for a contact's data, can be used to ensure that personalized information such as names and addresses are included in receipts. By crafting these messages beyond the default version that ships with CiviCRM, you can use them to tell your organization's story, seek further involvement, or solicit more support. Make sure the voice and tone in these messages are appropriate. The primary purpose of these automated messages should be to continue providing details to constituents in direct response to their action (for example, a receipt). Without hijacking their primary purpose, you can build secondary messaging into these messages to build your brand and impart your story. For example, you can put your organization's tag line or this month's featured call to action into the footer of all automated messages.

As mentioned above for all of your communications, the writing style or voice of these automated messages should suit your organization's persona. A professional business tone, for example, might result in: "Thank you for your contribution. Your official tax receipt will be issued in January for all charitable contributions received this year." For a youth-oriented organization, a more casual style is likely better: "Thanks for helping to deck the Dumbo Corporation. Tweet #deckdumbo with other oddball campaign ideas."

CiviCRM provides support for several proven best practices in online viral communications. For example, "forward to a friend" functionality may be enabled and will appear just after a constituent has signed up for an event or completed a donation. By offering this opportunity to invite others, you take advantage of "motivation-inertia" and extend your organization's reach through constituent networks. Besides, most people would be happy if some colleagues or friends were at the event with them, or want to tell others about a cause they've just donated to. Similarly, a good moment to invite people to start their own personal campaign to raise money for your organization is just after they have completed their own donation.

The essence of what we're getting at is the need to be intentional and strategic about what you say, when you say it, and how you say it, while remaining on the lookout for serendipitous opportunities to link communications and extend your message.

Call to action

Many for-profit marketing and sales techniques work well in the non-profit sector when asking for donations, volunteer time, event attendance, signing petitions, and so on. One simple but important communication technique to improve response rates is to have a clear, compelling **call to action**.

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Making the link between the action and a concrete desirable outcome improves response rates. For example, an emergency relief organization might communicate that every dollar you contribute will buy a child in the earthquake zone one day's worth of food. Increasing the urgency of the call improves response rates: "If you act now, then [fill in the blank with a desirable outcome]" or "If you don't act now, then [fill in the blank with an undesirable outcome]."

Engaging respondents' emotions such as through graphic pictures, anecdotes, and personal stories usually greatly increases response rates. They are the star actors in the show. By contrast, compelling rational cases using statistics and telling factoids are like supporting cast. They are best used to fill out the performance and help the stars shine.

The surrounding communication—text, graphics, music, and video—should all build the case for taking the action. Repeating the call to action several times in visually appealing and different ways helps, such as bold text links as well as buttons. By making it easier to complete the action, you improve response rates. "Click here" works better than expecting people to print a form, find their check book, get an envelope and stamp, and post the letter containing a donation.

Reinforcing your brand

Whether you are aware of it or not, everything your organization does while interacting with the world contributes to its reputation. Do people trust that your research is solid, come to you for innovative policy suggestions, or refer volunteers to you? Are they worried you'll waste their donations on administration? Can they count on you to get media attention for the issue? Are they uncomfortable with your approach because it is too confrontational or too cozy with the villains? Your brand is the sum of all these perceptions.

While knowing *how* you are perceived is one part of the story, the more important part is what is yet to happen. How does your organization want to be thought of? Could changing the organization's brand improve how well it achieves its goals? Would a sunnier, more playful visual identity help? A grittier, low-cost one? What about a more conservative, slicker one?

Communication activities are an important part of your brand. More people will typically receive bulk or broadcast communications than will interact directly with your organization through the programs and services you offer.

Everyone communicating with constituents on behalf of your organization should understand how their work fits into achieving the objectives of the organization. That way, they'll be able to strike the right tone in the messages, words, images, colors, and style they use. Communicating with constituents through CiviCRM, either one-on-one or in a broadcast manner, should always be done in a way that is intune with your organization's overall brand and visual identity.

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Sending e-mails to one or more constituents

CiviCRM provides tools for sending e-mails directly from the system, both to small sets of contacts (a single constituent or small group of constituents) as well as to large volumes of contacts. Later in this chapter, we will look at broadcasting e-mails using CiviMail in more detail. The line dividing easier, simpler, lower volume e-mailing and bulk, mass, or broadcast e-mailing is not always clear. Broadcast e-mailing is clearly appropriate when you are sending messages to thousands of recipients regularly as you need to know the open and click-through rates and segment based on that behavior, and you do not want to manually process invalid e-mails from the list or deal with temporarily unavailable accounts.

To keep things relatively clear, we'll call sending a non-broadcast e-mail *e-mailing* and follow CiviMail's terminology of referring to a broadcast e-mail as a *mailing*, and will always refer specifically to CiviMail rather than CiviCRM when dealing with bulk or broadcast e-mailing.

E-mailing using an external client

The simplest way to use CiviCRM to assist with communicating is to just click on any e-mail link it displays. For example, the **Contact Summary** page displays a contact's e-mails as clickable links. This will launch your e-mail client, placing the contact's e-mail into the **TO:** line. While this allows you to easily send an e-mail when looking at a contact's record, it may not be ideal from an overall CRM perspective as the e-mail will not be saved in CiviCRM. Fortunately, CiviCRM provides several tools to improve your ability to record e-mails directly in the system.

The question of what to retain and what not to retain in the system is important for your overall CRM strategy. Not all communications with all constituents need to go into CiviCRM. You must weigh the pros and cons of collecting and having too much information versus too little information. The former may create extra work ensuring the communications are stored and create a clutter of material to wade through in the system. The latter may result in other disconnected offline data sources being used to store and retrieve key information, or having insufficient history about interactions with a constituent. Once you've navigated these waters, develop a policy and procedure statement to guide staff which includes clear examples of what should definitely be included in or generated from the system, and what should not.

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Many CiviCRM sites, perhaps the majority, just track auto-generated messages sent to constituents and broadcast e-mails. Some may choose to record a few manually generated types of official communications to their system, such as e-mails notifying grant winners in CiviGrant. Others may try to collate all e-mails, in-person meetings, and phone call records that are related to one another through CiviCRM, particularly in the area of case management.

Articulating an appropriate policy where just important and useful e-mails are tracked can be challenging. We've all seen e-mail threads with 14 entries just trying to set the time, date, and place for a meeting. These communications may be voluminous and have no enduring interest or significance. Document retention policies usually distinguish between different types of communications that have appropriately shorter or longer retention periods depending on whether it has continued relevancy or legal liability.

Your policy on what to put into CiviCRM needn't include all e-mails just because it is relatively easy to capture them, nor should it exclude phone and face-to-face conversations in advancing a file because of the extra work involved in documenting those interactions. Will the constituent expect the organization to "remember" an interaction? If so, it likely belongs in CiviCRM.

To make the system useful, and avoid significant wastage of time when something should be in the system but isn't, the policy needs to be clear and followed consistently.

E-mailing using CiviCRM

As alluded to earlier, in addition to providing hotlinked e-mail addresses that will open in your preferred e-mail client, CiviCRM provides tools to e-mail one or more constituents directly from the system. Assuming you are about to e-mail something to a constituent that should be kept in CiviCRM, there are several ways to invoke e-mailing contacts in CiviCRM without using its broadcast e-mail component, CiviMail.

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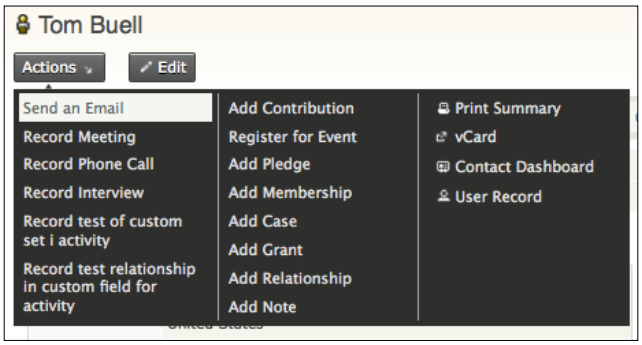
To e-mail a single contact on a **Search Results** page that has an e-mail displayed, select **Send an Email** on the **More** link at the right end of the row.

To e-mail multiple contacts from a **Search Results** page:

1. Select one or more contacts, or choose the **All Records** radio button.
2. Select **Send Email to Contacts** from the alphabetical listing on the **– actions –** button.
3. Click on the **Go** button.

Third, from a **Contact Summary** page, you can click on **Actions** | **Send an Email**. Note that if the contact does not have an e-mail or their privacy options are indicating they should not be e-mailed, then the **Send an Email** action is not displayed as an option.



Finally, from any page in the system, you can click on the **Create New** button in the left sidebar (default block location) and select **Email**.

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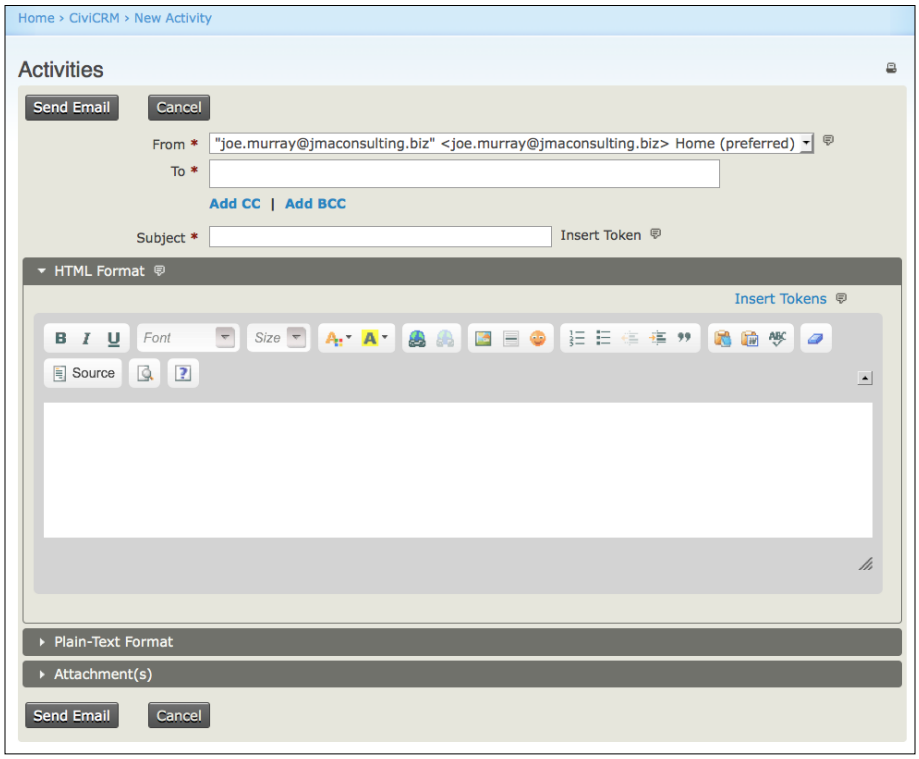
All four approaches will bring up the following form for e-mailing via CiviCRM:



While it seems like a fairly standard e-mail form, let's go through it field-by-field to learn about its special features:

- **From**: This defaults to the primary e-mail of the currently logged in user but also allows you to select from other e-mails set up in **Administer | Configure | FROM Email Addresses**. This is particularly useful for situations where there are departmental or functional e-mails (for example, `info@example.org`, `volunteering@example.org`, `events@example.org`) or where one staff member sends e-mails on another's behalf (for example, `ExecutiveDirector@example.org`). The e-mail will be logged as an activity for all contacts specified in the **From**, **To**, **CC**, and **BCC** fields.
- **To**: The primary e-mail address of the contact(s) to be e-mailed. If you arrived at this form through the contact record or search results, the field will be populated with the originating contact(s) e-mail address. If you arrived using the **Create New** button, you will need to search for the contact(s) you wish to send to. You can add additional e-mails using the standard auto-completion search functionality (name and e-mail).

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- **Add CC | Add BCC**: These links provide auto-completion search fields and ensure that the e-mail activity is added to the record of the relevant contacts.
- **Subject**: In addition to providing text that will appear unchanged on the subject line in people's inboxes, you can use the **Insert Token** link to include information from a contact's record that should be looked up and inserted into the subject line. This can include either core fields such as a person's first name, or contact-type custom fields that are specific to your installation of CiviCRM. The latter are included in the alphabetized drop-down list of field names as **Custom Field Name :: Custom Data Group Name**.
- **Use Template**: E-mail templates are used in slightly different ways in different parts of CiviCRM:
    - Unlike automated message templates generated from event signups, contribution pages, and other public facing forms, templates selected when manually sending an e-mail will pre-populate the content field and provide you an opportunity to manually edit the content before it is sent out. As a result, the process is more like making and editing a copy of a Word file than auto-generating a letter from a Word mail merge template.
    - Since it populates the field and then provides access to further edit the content, you can take advantage of the tool by creating e-mail templates containing just your design/layout branding, and also use it to create standardized responses for common queries received by phone or mail. When creating your template, take the time to test it thoroughly and ensure cross-client compatibility, including reviewing how it will appear in web-based e-mail tools (Gmail, Hotmail, and so on). It can take significant fiddling to get HTML-formatted e-mails to look consistent in different e-mail clients, especially when you are trying to do sophisticated formatting. By investing the time to create a well-constructed template, you will save time for end users creating the e-mails and help ensure effective visual branding.
- **HTML Format**: CiviCRM ships with two popular WYSIWYG (what you see is what you get) editors which support standard formatting tools when constructing your e-mail. We find that Drupal users will typically use **CKEditor**, and Joomla! users will select **TinyMCE**, as they are more commonly used in those respective CMSs. Note that in CiviCRM v3.3, Joomla! users will be able to use the default or user-specified editor installed in Joomla! and selected in **Global Configuration**, which will significantly extend the options available. The following screenshot refers to CKEditor. Some standard caveats apply:

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- While visually well-designed HTML e-mails tend to improve readability, click-through, and response rates, it is important to test and periodically retest how the e-mails are appearing in popular desktop and web-based e-mail clients. Invalid HTML markup, such as unclosed tags are red flags to spam checking software; so beware of inadvertently creating deliverability problems by having someone who is not familiar with HTML doing anything fancy in the HTML source view.
- CSS used in your e-mail should always be inserted directly in the HTML tags. Most e-mail clients don't support style declarations inserted in tags through class and ID values.
- Don't cut and paste directly from Microsoft Word because it uses non-standard markup code. Invisible to you when pasting, this markup code will often prevent your messages from appearing correctly in your recipients' inboxes because it references Microsoft-specific elements that are not widely supported. If you need to copy something from a Word document, the easiest way to remove the problematic markup code is to paste using the special Paste from Word or the Paste as Text icon. Paste as Word will attempt to retain structural elements, such as bullet lists, whereas Paste as Text more thoroughly strips all design and layout elements.

- For an image to appear in your constituents' browsers properly, it needs to be available on the Web somewhere. Generally, it is best to upload any image you need in your e-mail to a publicly accessible part of your website, making note of the URL that displays the image.
- When referencing pages on your website or inserting images, be sure to use the full URL (`http://…`), not a relative path. Remember that the e-mail received by your constituents will not be directly connected to your website, so relative path resources will be meaningless.
- There are a number of good resources (many of them free) for obtaining e-mail templates that are compatible with most e-mail clients. Consider obtaining some as the basis for your template and then modify to suit your organizational branding.

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- **Plain-Text Format**: Ensure that you fill this in if any of your recipients are marked as wanting plain text e-mails. The HTML version is not automatically converted to plain text.
- **Attachments**: When sending e-mails, you are given the option of attaching files. If the option to add attachments does not appear or you are not able to add as many attachments as you would like, check your configuration at **Administer** | **Configure** | **Global Settings** | **Miscellaneous**. Note that adding attachments could reduce the deliverability of messages, as it is one of the things many spam filters take into consideration. For small volume e-mails this should not be an issue, but it is generally not recommended when creating bulk e-mails.
- **Send E-mail button**: After you click on this button, the message will be sent and copies of the message with appropriate tokens replaced in the subject, and body of message will be attached to each recipient's and sender's record as an e-mail activity.

Printing address labels

Old fashioned though it is, postal mail is around, still useful, and won't be disappearing any time soon. While e-mail is less expensive and faster than regular mail, many people still do not use it, do not respond as well to email-only communications, or simply prefer receiving something they can hold in their hand. Multi-channel campaigns including direct mail, telemarketing, and meet-ups continue to outperform e-mail-only campaigns. Chances are that somewhere in your CRM plan, someone will still need to print out a list of addresses.

You will typically choose one of the two methods for generating a mailing depending on the size of the mailing and general mailing requirements. One option is to generate a search for the recipients and export the required fields as a `.csv` file. This file can be used as a mail merge data source with MS Word, Open Office Writer, or other word processors, or may be sent to a mail house for large volume processing.

Your second option is to generate mailing labels directly from within CiviCRM. This is commonly used for small mailings, which you will be processing in-house.

CiviCRM makes mailing label generation easy:

1. Find the contacts by using any of the search options outlined in *Chapter 3*, *Installation, Configuration, and Maintenance*. (Consider creating a smart group for contacts that are mailed regularly.)
2. Select the contacts to be included in the print mailing labels action.

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3. Select **Mailing Labels** on the **– actions –** button.
4. Click on the **Go** button, and then configure mailing label options as follows.
5. Beside **Select Label**, choose the Avery label type that you will be printing on (typically indicated on the packaging). If you are not using an Avery product, look for an indication showing which Avery number the labels are compatible with, as many companies use the same dimensions. You can also look up the dimensions for the available labels on the Avery site for your country (for example, `http://www.avery.com` site does not list the A4-sized products that begin with L, and `http://www.avery.fr` does not list the North American 8.5 x 11 ones).
6. Choose the mailing **Location** for each contact. Every contact must have one of its addresses marked as **Primary**.
7. Choose whether you want to remove contacts with the "Do Not Mail" communication preference selected.
8. Depending on how you have decided to enter and store your data in CiviCRM, you may want to reduce postage charges either by choosing to merge labels for contacts belonging to the same household, or by choosing to merge labels for all contacts with the same address (a common need for organizations that do not use **Household** contacts).
9. Click on **Make Mailing Labels** and save the resulting PDF download file to your hard drive.
10. Print the file. If you have a big printout, you might want to initially print only one page to check the alignment of the text with the labels.

Recording a postal mailing

Normally, when you print a list of mailing labels, you're about to communicate with those contacts. The process of generating mailing labels does not automatically record the fact that you will be using it for a mailing. As a best practice, we recommend creating an activity for your mailing recipients after generating mailing labels as an effective way to retain a history of communication. The default installation of CiviCRM does not include an activity type appropriate to postal mailings, so the first step is to create such a type. Here are the steps to record mailings at the same time mailing labels are printed:

1. Create a Postal Mailing Activity:
    - Click on **Administer** | **Option Lists** | **Activity Types**
    - Click on **Add Activity Type**
    - Enter a suitable **Label**, such as **Postal Mailing**
    - Enter a suitable **Description**, such as **Postal Mailing**

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- Select **Contact** as the **Component**
- Click on the **Save** button

2. Record a **Postal Mailing** activity for each contact included:
    - Find the contacts using exactly the same method and criteria as used to creating the mailing labels. If you have just run the mailing labels, you can click on the **Cancel** button or **Search Results** from the breadcrumbs to immediately return to your result list and perform a follow up action.
    - Select the **Record Activity for Contacts** on the **– actions –** button.
    - Select **Postal Mailing** as the **Activity Type**.
    - Enter a name for the mailing in the **Subject** field, perhaps also a description in the **Details** field.
    - Open the **Attachments** fieldset, and **Browse** to upload the file(s) you mailed, such as a Word document letter.
    - If appropriate, open the **Schedule Follow-up** fieldset and enter a follow-up activity, like a phone call in 10 days.

Printing a PDF letter

Most organizations will be familiar with the idea of a merge letter. Rather than creating a generic letter addressed to "Dear Supporter," you want a personalized greeting that includes the individual's first name, such as "Dear Sofia".

Sending a letter with a personalized greeting and other personalized content inside an envelope with the correct address on it is no small challenge when hundreds or thousands are being produced. Large direct mail houses will often have special machines that print a personalized letter and its personalized envelope at the same time, and then insert the included content and seal the envelope, all within a strictly defined workflow that eliminates the possibility of mismatched elements. Small organizations may have envelope stuffing "parties" where letters are folded, address labels are applied, the folded letters are stuffed in the envelopes, perhaps a reply envelope or postcard, and the package is sealed and mailed. With all of that activity going on, it's all too easy for a single envelope or letter to get missed or mismatched unless there's lots of checking going on.

An easier way to handle things that are less prone to mix-ups is to use window envelopes. The letter is laid out and folded in such a way that the mailing address is displayed through the window.

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The letter itself will have merge fields in place to fill in the field values for the contact. For example, the address block will use the appropriate merge fields, and you may address the recipient as "Dear Firstname" using another field.

There are two ways you will construct your merge letter: outside of the system using MS Word, Open Office Writer, or a similar word processor; or inside the system using CiviCRM's **Print PDF Letter** function. There are pros and cons to both solutions:

- Using a word processor will provide tools you may be more familiar with and more control over the layout. However, you will have the added steps of exporting your CiviCRM contact data to a `.csv` file, and then linking it as a mail merge data source.
- CiviCRM's **Print PDF Letter** tool benefits from direct integration with your data. However, the interface for laying out your letter uses the WYSIWYG editor toolbar which is not well-suited for print-based layouts. You are likely to find it to be a bit cumbersome and awkward to use, requiring quite a bit of trial and error before you have the document laid out correctly.

If your letter will be used repeatedly, such as a welcome letter to new members that you generate monthly, it will be worth the time and effort to create it in the system. However, if this is a single-use letter, it may be easier to process it outside the system using tools you are familiar with.

Printing a PDF letter starts with the same steps as many other actions you may take on groups of records:

1. Use any of the search procedures outlined in *Chapter 3*, *Installation, Configuration, and Maintenance* to find the contacts that are to receive the letter.
2. Select the contacts that are to receive the letter.
3. Select **Print PDF Letter for Contacts** on the **– actions –** button.
4. Click on the **Go** button.
5. If you have an existing template, you may use the **Select Template** field to pre-populate the content region. Otherwise, begin creating your letter content from scratch.

Mail merge fields in CiviCRM are called **Tokens**. We've mentioned them earlier when talking about e-mails. The interface and tools for creating a PDF letter are almost identical to the e-mail creation process, except that the final product will be a PDF file for printing rather than an e-mail sent directly to constituents.

To the right and above the content region of this page, you will see a link to **Insert Tokens**. Clicking on it opens a popup window where you can select and insert tokens into your document. Use the search box at the top of the window to quickly locate your desired token.

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When tokens are inserted in your document, they will appear in brackets and include the actual data type and field name. You can move tokens around your document, but be sure not to alter the text inside the brackets as it will break the field reference.

Once inserted, your page with tokens may look like this:

> *Dear* **{contact.first_name}**,
> *I want to invite you to our …*

After processing by CiviCRM, the token will be replaced in each copy of the letter by the first name of each contact who is to receive the letter. For example:

> *Dear* **Josephine**,
> *I want to invite you to our…*

Here are a few tokens that will have particular use and significance as you assemble your letter:

- **Display Name**: Generated for every contact record, specific to the type of record. For **Organization** and **Household** records, the organization/ household name serves as the display name. For individuals, the display name is calculated as "first_name last_name" by default. If your mailing includes contacts across multiple contact types, this field can be used to refer to the contact regardless of its type.
- **Postal Greeting**: This is also a constructed field, intended to be the greeting line in a letter. A default formula exists for every contact type and will be automatically created and saved for each record. You may alter this value on a case-by-case basis for each record through the communication preferences panel. The most common value is "Dear name".
- **Addressee**: This is also found in the contact's communication preferences panel and represents a calculated value for how the contact will be listed in the address block.
- The following tokens allow you to customize your letter's address blocks to fit your needs:

```
{contact.addressee}
{contact.street_address}
{contact.supplemental_address_1}
{contact.supplemental_address_2}
{contact.city}{, }{contact.state_province}{ }{contact.postal_code}
{contact.country}
```

Whether you are creating a standard letter that will be used multiple times or want a layout framework with standard fields, it's likely that at some point, you will want to save your content as a reusable template.

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You will need to create your template by going to **Mailings | Message Templates** or **Administer | Configure | Message Templates**. Use the **User-Driven Messages** tab to create new templates. Once created here, they will be available to the PDF Letter tool.

Once you have finished authoring the letter's content click on the **Make PDF Letters** button to generate the PDF file. Be sure to review it thoroughly and make sure your tokens have rendered field values as expected. If they did not appear correctly, visit one of the records in your search results and make sure the fields actually have data in them. Then, try reinserting the tokens using the popup tool.

Organizing groups for communication

We've mentioned a few times so far in this chapter the convenience of having groups constructed for sets of contacts that are regularly used for different purposes. *Chapter 5, Collecting, Organizing, and Importing Data* explained the difference between static and smart groups. With static groups, members are explicitly added or removed from the group either by an administrator (for example, for a Board of Directors group) or themselves (for example, for an opt-in mailing list). With smart or dynamic groups, search criteria define the group. As data associated with contacts changes, it may be added or removed from the group based on the defined criteria. A smart group might contain all contacts with memberships expiring in the next month, or those who have donated more than $2500 in total over the last two years.

One of the primary purposes of creating groups is to easily manage segments of records you are communicating with. One functional way to look at this is to think of the contacts that the communications staff will need to find and select repeatedly. If your communication efforts are oriented around regularly-disseminated products, such as a monthly newsletter, you will orient your groups around the list of contacts to which they are sent. Every one of those lists stored in CiviCRM is a good candidate for becoming a group.

Other parts of your organization may also be communicating with groups of constituents and will need their own CiviCRM groups. Volunteer management, development/fundraising, membership, education, or events will each need CiviCRM groups set up for every list they deal with.

Groups are also essential to CiviMail, CiviCRM's bulk e-mailing tool. We strongly recommend that bulk e-mails should only be sent to contacts who have opted-in to that specific mailing, which makes it essential that the membership in those lists be self-managed. In some jurisdictions, this is becoming the law. When generating smart groups from searches, you can easily accommodate the removal of opt-out contacts. Other forms of communication such as direct mail and telemarketing are also trending more towards permission-based models that at least allow for opt-outs.

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There are two general rules of thumb on how to implement groups for communications in CiviCRM. First, it works well to use opt-in static groups for subscriptions to regular communication products like newsletters. These self-serve subscriptions are excellent at bringing people into the wide side of the funnel.

Second, it works well to use smart groups based on the segmentation criteria for targeting certain constituents for conversion efforts from one layer in the funnel to another. For example, high-touch, high-cost approaches for major donors should be directed towards members of a tightly qualified set of prospects.

To review whether a group is currently set up so that it can be used for e-mailing or so that people can see and control their membership in it, follow these steps:

1. Click on **Contacts** | **Manage Group**.
2. Under **Group Type**, review if the group is set up as a **Mailing List**. Only groups configured as a **Mailing List** will be visible to the CiviMail bulk e-mail interface.
3. Under **Visibility**, review if the group is configured to appear on **Public Pages**. This visibility option determines if the group will appear in profile pages that include the group(s) field, and whether it will appear in the **Mailing List Subscription** page.
4. If you want to change one of these parameters for an existing group, click on the **Settings** button towards the right of its row and make the desired changes.

Occasionally, it can be convenient to create a hierarchy of groups for communication purposes. For example, a chapter-based organization that manages newsletter subscriptions at the local level may have a central communication product that is sent to all subscribers of local subscriptions. If there were hundreds of local chapters, such as constituency associations in a political party, then it would be quite elegant to have each local newsletter subscriber group set up as a child of the central one if the opt-in messages indicated that both a central and local newsletter would be sent to subscribers. Users would be able to select a single list, and staff would not need to worry about lists getting out of sync.

When editing the settings for a group as just described, parent groups can be added one at a time by selecting them in the **Add Parent** field and clicking on **Save**. Similarly, parent groups can be deleted by selecting the group under **Remove Parent** and then clicking on **Save**.

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Encouraging subscriptions using profiles

A basic but highly successful method of growing an organization's e-mail lists is to provide prominent, easy-to-use options for newsletter signups on the organization's website. This can vary depending on the site design and layout, but smack bang in the middle of the front page is probably too strong for any information architecture. Usually, the home page or all pages have a simple signup form in a sidebar or header region, or a button that directs the user to a full-page signup form where additional details are collected.

Other good places to request website visitors to subscribe to a newsletter are when they are buying a paid membership, and on thank you pages just after they have done something that indicates some level of commitment to the organization. Depending on your site information architecture and more importantly your organization's process for engaging website users initially, it may be a good idea to have options for newsletter signups as part of the user account registration form. The downside to including it is that every additional field on a form increases potential abandonment for visitors with low commitment.

A profile used to signup new subscribers must include the contact e-mail address field at a minimum. It is not uncommon to include the name and postal code fields, though you should remember that too many fields will increase the likelihood of form abandonment. The postal code allows geographical targeting of content and appeals to the subscriber, while having the name can improve responsiveness to later personalized appeals and improve duplicate contact identification for merging and purging.

As mentioned earlier, CiviCRM provides a built-in field called Group(s) that can be used in signup profiles to enable people to join mailing list groups that require a double opt-in (that is, confirmation of opting-in after they receive an e-mail in order to circumvent bots or unvalidated signups). This field actually provides checkboxes on the profile for every mailing list designated for public page visibility. If you prefer subscription forms that designate a single group rather than a list of options, you can use the subscription page URL and append the Group ID number (`gid=N`):

- Drupal: `http://example.org/civicrm/mailing/subscribe?reset=1&gid=N`
- Joomla!: `http://example.org/index.php?option=com_civicrm&task=civicrm/mailing/subscribe&reset=1&gid=N`

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To create a simple newsletter subscription profile in CiviCRM and display it on pages or in blocks in either a Drupal or Joomla! site, follow these steps:

1. Create publicly visible **Groups** as per the recipe in the prevision subsection.
2. Click on **Administer** | **Customize** | **CiviCRM Profile**.
3. Click on **Add Profile**.
4. Enter an appropriate **Profile Name**.
5. Leave **Profile** checked in **Used For**.
6. Enter help text if desired.
7. Click to open the **Advanced Settings**.

Note that it is possible to use the **Add new contacts to a Group?** functionality to add signups to a mailing list group. However, doing so will bypass the double opt-in functionality. If you choose to use this option, be sure to include in the page help text that the user will be added to your mailing list.

8. Change **Drupal user account registration option?** to **No account create option**.
9. Change **What to do upon duplicate match** to **Update the matching contact**.
10. Click on the **Save** button.
11. Look at the URL in the browser's address bar and take note of the value of `N` in the `gid=N` key value pair. This is the profile's group ID.
12. On the **Add Field** form, for **Field Name** select **Contacts**, **Email**, and **Primary**.
13. We tend to prefer changing **Field Label** from **Email (Primary)** to **Email**.
14. Click on the **Required?** checkbox so that it is true.
15. Change **Visibility** from **User and User Admin Only** to **Public Pages**.
16. Click on the **Save and New** button.
17. On the new **Add Field** form, for **Field Name** select **Contacts**, **Group(s)**.
18. Change the **Field Label** from **Group(s)** to **Subscription(s)**.
19. Change **Visibility** from **User and User Admin Only** to **Public Pages**.
20. Click on the **Save and New** button to add other fields like **First Name**, **Last Name**, and **Postal Code**, or the **Save** button to complete the form.
21. Click on **Administer** | **Customize** | **CiviCRM Profile**.
22. On the far right of the row for the newly created profile, click on the **more** link, and then select **Use Profile-Create Mode**. The URL for this form can be added to menus to provide a Newsletter Subscription page.

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23. In Drupal, ensure that **Administer** | **User Management** | **Permissions** has **profile listings and forms** enabled for **Anonymous users**.
24. In Drupal, if you have added custom fields to the profile, ensure that **Administer** | **User Management** | **Permissions** has **Access all custom data** enabled for **Anonymous users**.
25. In Joomla!, create a new CiviCRM menu link, select the **Profile Create** option, and select your profile from the parameters drop-down.

To create a small form block rather than a full-page form, do the following:

1. Go back to **Administer** | **Customize** | **CiviCRM Profile**.
2. On the far right of the row of the newly created profile, click on the **more** link, and then select **HTML Form Snippet**.
3. Click on the **Select HTML Code** button, and then copy the selection into the clipboard.

Then, if you are in Drupal, do the following:

1. Click on **Administer** | **Site Building** | **Blocks**.
2. Click on **Add block** at the top of the form.
3. Paste the contents of your clipboard into the **Block body** text area.
4. Optionally, remove HTML that refers to subscriptions not wanted in this block.
5. Optionally, change the page that users are sent to after successfully completing the form by changing the **value** of hidden **postURL** input field to a different valid URL.
6. Optionally, change the location where errors are displayed from within the block on the same page to a different page by adding `<input type="hidden" name="errorURL" value="http://www.example.com/subscription_errors.html">` to the snippet.
7. Provide an appropriate **Block description** and **Block title**.
8. Click to open the **Input Format**.
9. Select **Full HTML**.
10. Optionally change the **visibility settings**.
11. Click the **Save block** button.
12. In the **Disabled** section, find the row for the block you just created, then change its region from **<none>** to an appropriate region.

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Alternatively, if you are working in Joomla!:

1. In the text from the **Select HTML Code** button above, change the action URL to the URL for the **Use Profile-Create Mode** form.
2. Optionally remove HTML that refers to subscriptions not wanted in this block.
3. If you are using **Province State** fields, change `<option value="">- select -</option>` so that it includes a zero in the value: `<option value="0">- select -</option>`.
4. Before inserting the code, make sure to toggle the editor into view source mode.
5. Use the code snippet as desired in your Joomla! site, such as in a custom HTML-type module.

Joomla! users may also use the CiviNews module extension found on the Joomla! Extension Directory at `http://extensions.joomla.org/extensions/extension-specific/civicrm`. This module includes the core fields required for newsletter (group) signup.

Sending a bulk e-mail

Now that we have set up a group to which we can send a mass e-mail and provided ways for site visitors to subscribe to our newsletter and other bulk e-mail subscriptions, it's time to send a bulk e-mail with CiviMail to all the group members who have subscribed to it.

The construction of a bulk e-mail message involves a five-step wizard in which you select the recipients, mailing options, develop content, preview/test, and then schedule the mailing. Before we work through those steps, let's look at a few additional tools and options you may want to review and configure first.

Configuring the header and footer

CiviCRM supports the creation of multiple headers and footers for insertion in your mailing. These can be used in conjunction with or in lieu of message templates. The footer, in particular, can be a very useful element in your mailing.

In order to comply with the US CAN-SPAM Act, and in accordance with generally accepted mailing practices worldwide, every mail sent using CiviCRM must include two special mailing tokens: the domain address and the opt-out URL or e-mail token. We also recommend that you include the group-unsubscribe URL or e-mail token.

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It is important to understand the difference between opt-out and unsubscribe: opt-out means that the user has chosen to completely remove themselves from receiving all e-mails from your organization; unsubscribe means they choose to no longer receive a certain newsletter (they are removed from the associated group). If both links are included in your e-mail, be certain to craft the language carefully and accurately. Wherever possible, you will want to encourage people to simply unsubscribe from a certain list rather than completely opting out of all e-mails. If the latter is selected, you may be legally bound to respect the contact's request.

The footer comes into play by providing a useful way to collect these required tokens and make sure they are consistently inserted in your mail. We recommend constructing a single default footer that is generic enough in its layout to be used in conjunction with any template. The footer should generally include the organization's name, domain address token, phone/e-mail/website, and opt-out/unsubscribe tokens.

Optional elements mentioned earlier in the chapter are your organization's tagline/mission, and perhaps a featured call to action that you change regularly. Note that the opt-out/unsubscribe tokens may be included as a URL link (which directs people to your website where they confirm the action) or as an e-mail address which is processed by the CiviMail `EmailProcessor.php` script (see *Chapter 3*, *Installation, Configuration, and Maintenance* for more details). We recommend using the URL form unless there's clear reason to do otherwise. By using the URL, you force people to visit your website before taking action, which provides an opportunity to remind them about who you are, what you do, and perhaps cause them to rethink their removal request.

To construct and edit headers and footers, carry out the following steps:

1. Click on either **Administer** | **CiviMail** | **Headers, Footers and Automated Messages** or **Mailings** | **Headers, Footers and Automated Messages**.
2. Click on the **Edit** link on the right of the **Mailing Header** row (you could also click on **New Mailing Component** button).
3. Customize the contents of the **Body – TEXT Format** and **Body – HTML Format** fields as appropriate, specifically including visual formatting for the latter.
4. If you use a header/footer pair to layout your entire page, in the **Body – HTML Format** field for the header, include the `<html>`, `<head>`, `</head>` and `<body>` tags. Then close those tags (`</body>` and `</html>`) in the associated footer. Doing so will frame your e-mail in the appropriate HTML tags and will allow you to use the body region for your content.
5. Consider defining `<style type="text/css" media="screen">` in the body to define inline `CSS` for formatting.

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6. To include an image in the e-mail, use an absolute path to a publicly accessible location, for example:

```
td.footer {
background-image:url( 'http://example.org/sites/example.org/
themes/example/images/newsletter-footer-bg.gif');
}
```

7. Click on **Save**.
8. Click on the **Edit** link on the right of the **Mailing Footer** row (you could also click on the **New Mailing Component** button).
9. Customize the contents of the **Body – TEXT Format** and **Body – HTML Format** fields as appropriate, specifically including visual formatting for the latter.
10. The footer is the best place to put text and tokens to allow users to unsubscribe from the mailing list and/or from all of your communications.
11. For the **Body – HTML Format**, don't forget the `</body>` and `</html>` tags.
12. Click on **Save**.

Configuring and sending bulk e-mails

As introduced earlier, the actual construction of a bulk e-mail consists of walking through a five-step wizard as follows:

1. Click on **Mailings** | **New Mailing**.
2. Enter a value in **Name Your Mailing**.
3. Use the advanced multi-select tool to include/exclude groups and include/exclude recipients of past mailings as appropriate. The tool works by moving selections from the left column to the right by either double-clicking on them, or selecting and clicking on the nearby **Add** button.

Don't see a group listed that you are confident exists in your system? Remember that only groups flagged as a mailing list in the group settings will be available in the mailing interface.

4. Click on **Next**.

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5. Optionally, change the **Tracking** and **Responding** selections. These options cover several important functions. Enabling **Track Click-throughs?** will rewrite any website links found in the content of your e-mail and route them through CiviCRM. The system can then record when a user visits a link and provide details in the mailing report. This can be an important metric for determining the effectiveness of your mailings. **Enabling Track Opens?** will record whether the recipient opened the e-mail. Note that this is an imperfect metric, but still helpful in gauging the overall success of your mailing efforts. Enabling the **Track Replies?**, **Forward Replies**, and **Autorespond to Replies?** will similarly track follow-up actions taken by recipients.

Note that the track replies and forwards functionality requires the proper functioning of CiviCRM's `EmailProcessor` script. See *Chapter 3, Installation, Configuration, and Maintenance* for a full discussion of cron job scripts that ship with CiviCRM and how to configure them to your needs. Also note that you can turn these two options to default enabled by altering the constant defined in your `civicrm.settings.php` file. If you plan to use these options regularly, you will want to do that to avoid manually turning them on for each mailing.

6. Click **Next**.
7. Select **From Email Address**. These can be added or updated at **Mailings** | **From Email Addresses** or **Administer** | **CiviMail** | **From Email Addresses**.
8. If desired, select a template from the pull down list. Doing so will populate the subject and content fields which you can then edit as desired.
9. Enter the subject line that will appear in your e-mail in the **Mailing Subject** field.
10. Either compose on-screen by entering content into the **HTML Format** and **Plain-Text Format** fields or click on **Upload Content** and **Browse** to upload files.
11. As noted earlier, ensure that the `{domain.address}` and either `{action.optOutUrl}` or `{action.optOut}` tokens are included in your content. CiviCRM requires this in order to ensure that CiviMail is not inadvertently used in a way that is sure to get your site blacklisted as a spammer and thus unable to get much of your e-mail delivered. If you've not included them in a standard footer as recommended, they must appear in the body content (generally in both the HTML and Text versions). In your HTML version, you are likely to want to embed the opt-out URL/e-mail token in a hyperlink (a) tag with user-friendly text.

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Puzzled why the URL and e-mail constructed by the opt-out tokens appear as long, seemingly meaningless values? When CiviCRM generates the e-mails, it assigns a unique value to the opt-out tokens. This provides a connection back to the e-mail and contact record if the user chooses to opt-out.

12. If you plan to use the layout/structure or content of this e-mail for future communications, you may save it as a new template. If the e-mail was based on an existing template, you may update it by clicking the appropriate option. This step in the wizard is also where you select your header/footer and any attachments.
13. Click on **Next**.
14. It is highly recommended that you always send a **Test Mailing** and carefully review it before mass mailing. A test can be sent to a single address or to a predefined group. For example, you may want to create an e-mail test group of people who will regularly review e-mails before they are sent out. It is especially useful to check the message when new or changed bulk e-mail formatting is first used. These checks should include viewing the message in both HTML and text as it comes directly from CiviMail in a variety of e-mail clients and browser-based e-mail services (for example, Outlook, Gmail, Hotmail, and so on), as well as after it has been forwarded.
15. Enter your e-mail in the **Send to This Address** field and/or select an appropriate test group from the **Send to this Group** list.
16. Click on **Send a Test Mailing**.
17. When you are satisfied with the test mailing, click on **Next**.
18. Select to send either immediately or schedule the mailing to go out at a later date/time. In both cases, a cron job must run for the mail to be sent.
19. Note that you must unselect **Send** immediately for the scheduled mailing time to be noticed.
20. Click on **Submit Mailing**.

At this point, the mailing enters the CiviMail queue. It won't actually be sent until the mailing script (`civicmail.cronjob.php`) is run. Normally, this will be set up as a cron job on your server and scheduled to poll the queue at regular intervals and start mailings. Understand that it will take time for the mailing to be processed. Initially, there will be a delay as the mailing won't begin until the next cron job is run. Thereafter CiviCRM will process the mailings as fast as your hosting environment and resources permit.

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Managing mailings in process

After initiating a mailing, you can monitor its status by doing the following:

1. Click on **Mailings | Scheduled and Sent Mailings**.
2. Click on the **Report** link to the right of the row for the mailing of interest.

You can cancel or delete a mailing that is in the process of being delivered by doing the following:

1. Click on **Mailings | Scheduled and Sent Mailings**.
2. Click on the **– more –** link to the right of the row for the mailing of interest, and click on either **Cancel** or **Delete**.
3. Cancelling will stop further sending. There is no ability to recall e-mails already sent out; it simply halts the mailing process at the time when you cancel it.
4. Deleting stops further sending and removes existing data about the mailing from CiviCRM.

As soon as the actual mailing process initiates, you can begin to review the mailing report. It will periodically get updated with new information as the mailing proceeds. The metrics for click-opens and click-throughs will generally change for several days after a mailing is sent. Constituents may receive the e-mail, take note of it, but may not follow up by clicking on links inside it for a few days after receiving it.

The report itself provides a snapshot of the key metrics and details of the mailing. This includes the number of successful deliveries, bounces, click-opens, click-throughs (including a list of each link and whether it was a unique click), and links to the list of contacts to whom the mailing was sent. It also provides a copy of the message and record of the mailing options you chose.

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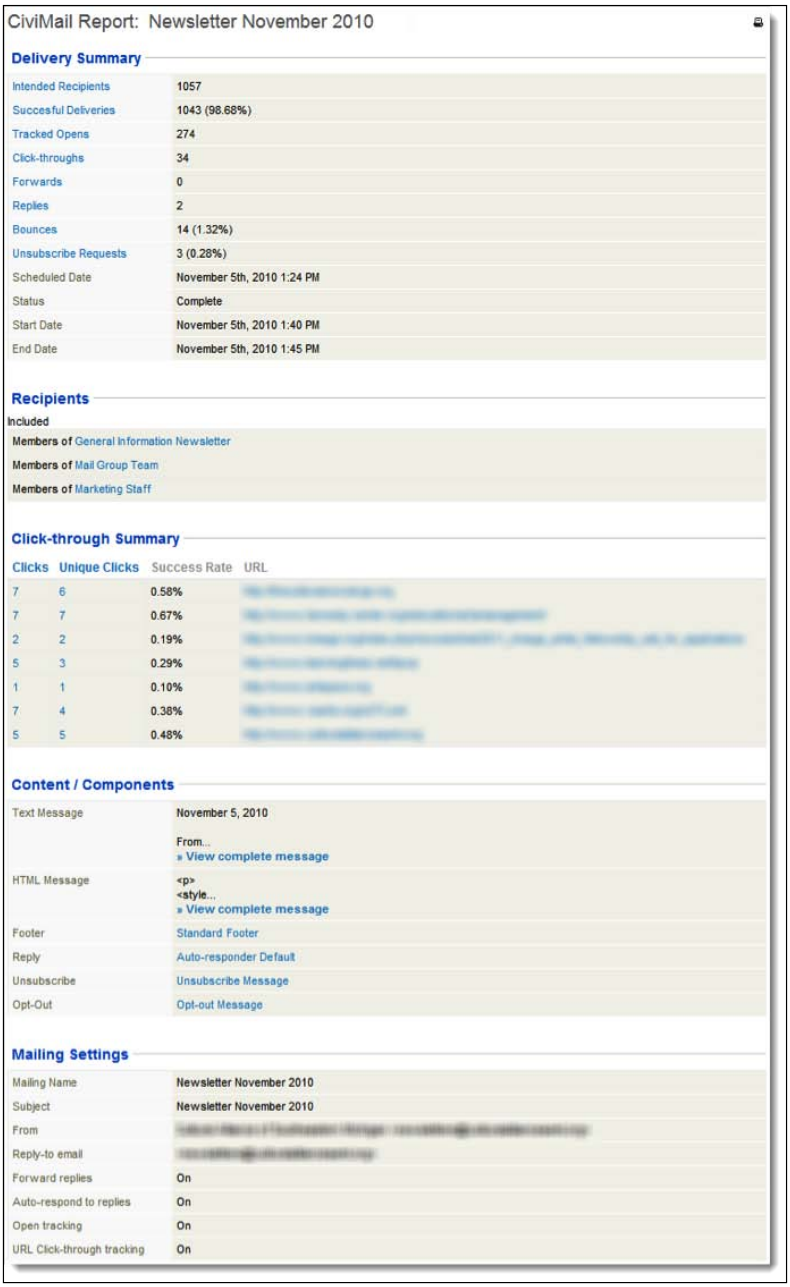
The following screenshot is from an actual mailing (with some organization-specific details obfuscated). Note that the categorized items in the **Delivery Summary** section are all hyperlinked. For example, you can click the click-through links to view a list of all contacts in the mailing who clicked on at least one link in your mailing.



CiviMail Report: Newsletter November 2010

Delivery Summary

Intended Recipients	1057
Succesful Deliveries	1043 (98.68%)
Tracked Opens	274
Click-throughs	34
Forwards	0
Replies	2
Bounces	14 (1.32%)
Unsubscribe Requests	3 (0.28%)
Scheduled Date	November 5th, 2010 1:24 PM
Status	Complete
Start Date	November 5th, 2010 1:40 PM
End Date	November 5th, 2010 1:45 PM

Recipients

Included

Members of General Information Newsletter

Members of Mail Group Team

Members of Marketing Staff

Click-through Summary

Clicks	Unique Clicks	Success Rate	URL
7	6	0.58%	
7	7	0.67%	
2	2	0.19%	
5	3	0.29%	
1	1	0.10%	
7	4	0.38%	
5	5	0.48%	

Content / Components

Text Message	November 5, 2010 From... » View complete message
HTML Message	<p> <style... » View complete message
Footer	Standard Footer
Reply	Auto-responder Default
Unsubscribe	Unsubscribe Message
Opt-Out	Opt-out Message

Mailing Settings

Mailing Name	Newsletter November 2010
Subject	Newsletter November 2010
From	
Reply-to email	
Forward replies	On
Auto-respond to replies	On
Open tracking	On
URL Click-through tracking	On

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Creating a bulk e-mail template

If you have already scheduled or sent a bulk e-mail similar to what you need to send, then you can copy and modify it. This effectively uses it as a template for both the mailing settings and the message content and formatting. Do this by clicking on **Mailings** | **Scheduled and Sent Mailings**, then clicking on the **Re-use** link to the right of the row for the mailing of interest.

You can create a template based on the message content and formatting during the third step in the mailing process, as noted earlier. Templates may also be constructed independent of the mailing wizard by visiting **Mailings** | **Message Templates.** Note the difference between reusing a past mailing and creating a mailing from a template. The former will copy all settings, including the recipient selections and mailing settings, while the latter only pre-populates the mailing subject and body regions.

Begin creating a bulk e-mail template by either re-using an existing bulk mailing or creating a new one using the steps outlined above. Then proceed as follows:

1. On step 3 of the wizard entitled **Mailing Content (step 3 of 5)**, make sure that **I want to Compose On-screen** is selected.
2. At the bottom of the **Compose On-screen** field, click to select **Save As New Template**. In the **Template Title** field that appears, enter an appropriate name for the template. If your e-mail was based on an existing template, you may also choose to update it rather than creating a new one.

You can manage existing templates using the **Mailings** | **Message Templates** tool. Notice that these templates will be available to both the CiviMail bulk e-mail and basic send e-mail activities.

Customizing system workflow messages

In *Chapter 3*, *Installation, Configuration, and Maintenance* we outlined how to set up CiviCRM to send e-mails. Once that is done, CiviCRM sends a number of messages automatically as part of its workflow. The text and formatting of these messages provided in the standard installation is basic and serviceable. During your initial configuration, you should consider customizing these messages to fit with your organization's communication style. Alternatively, it is easier though a bit less professional to wait until you see problems before changing default automated message templates. When you or your users start to see workflow messages that don't have quite the right tone or polish of the rest of your organization's communications, you can find the message template at issue and modify it.

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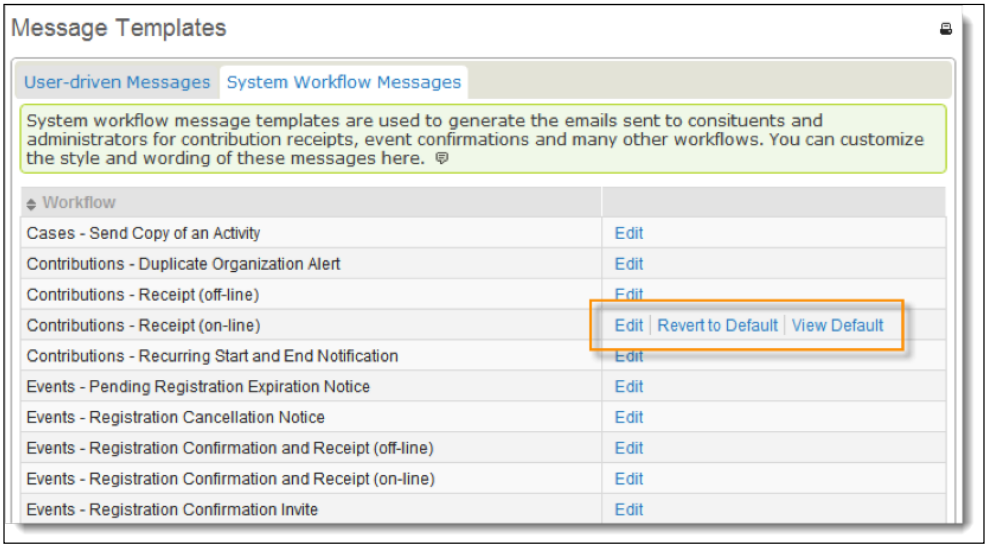
The process begins by noting the text that is problematic, working out what should replace it, finding the text in the appropriate template, and then replacing it with the new text.

We reviewed the basic workflow template tools earlier in this book. However, it's worth reviewing again at this juncture because those automated messages are certainly part of your overall communication strategy. On one hand, they serve the primary purpose of providing details about an event registration, online pledge, or case record, for example, and so it is natural for the content to primarily focus relaying the necessary details. However, as stated earlier, these messages also provide an opportunity to share your message in different ways with people who clearly have a level of commitment to the organization. Further, the essence of branding is consistency. If all the e-mails generated from your system have a certain look and feel except for the automated response e-mails, you risk compromising the brand you've established.

Workflow message templates are accessed through **Mailings | Message Templates**, from the **System Workflow Templates** tab. The templates are pretty clearly titled; click on **Edit** in the appropriate row to access the content.


Message Templates
User-driven Messages
System Workflow Messages
System workflow message templates are used to generate the emails sent to consituents and administrators for contribution receipts, event confirmations and many other workflows. You can customize the style and wording of these messages here.
Workflow
Cases - Send Copy of an Activity
Edit
Contributions - Duplicate Organization Alert
Edit
Contributions - Receipt (off-line)
Edit
Contributions - Receipt (on-line)
Edit
Revert to Default
View Default
Contributions - Recurring Start and End Notification
Edit
Events - Pending Registration Expiration Notice
Edit
Events - Registration Cancellation Notice
Edit
Events - Registration Confirmation and Receipt (off-line)
Edit
Events - Registration Confirmation and Receipt (on-line)
Edit
Events - Registration Confirmation Invite
Edit

After editing and saving a template, the row will have two additional action options: **Revert to Default** and **View Default**. As a result of the automated function of these templates, it's important that they should be constructed properly and should include the necessary fields. If you edit a template and find it is no longer working correctly, you may view the default version (for comparison) or revert to it and re-implement your edits.

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The edits we are about to describe benefit from a higher level of technical expertise than needed for most other material in this book. The good thing is that it is easy to fix anything you break by reverting to the default. Still, you might want to have a communications wordsmith, a graphic designer, and a technically skilled HTML coder work together on this if you want to do more complicated changes than what we describe.

The template content may appear overwhelming at first as it contains many conditional statements (`if/else`), HTML, and field variables. Workflow e-mails use the Smarty templating system to render field values and perform operations and calculations on the content.

Smarty has much more power than the basic token replacement we saw in the user-driven e-mails. These system templates take advantage of that power in many cases. In order to edit the more complex system templates, it helps to know how to recognize things that are safe to change, things that may break the system template if you change them, and how to revert back to the default template if things start going wrong. We're not aiming to learn how to use the more programming-like functions in Smarty, but just to learn how to edit the text strings mixed in among the programming constructs.

Let's take a brief look at a frequently used message template that often benefits from editing: **Contributions – Receipt (on-line)**. If we click on its **Edit** link, we can use the first 15 or 20 lines of content in the **Plain-Text** Format field to illustrate how to approach customizing these files. We see the following:

```
{if $receipt_text}
{$receipt_text}
{/if}
{if $is_pay_later}
============================================================
{$pay_later_receipt}
============================================================
{else}
{ts}Please print this receipt for your records.{/ts}
{/if}
{if $amount}
============================================================
{ts}Contribution Information{/ts}
```


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The first thing to notice is that there are two pieces of text that display in the receipt message: `Please print this receipt for your records`, and `Contribution Information`. Both are surrounded by opening (`{ts}`) and closing `{/ts}` tags. These `ts` tags are used to identify strings of text that are translatable into other languages. Inadvertently, this helps non-technical users identify relatively easily what can be changed and what cannot. Anything in between opening `{ts}` and closing `{/ts}` tags should be modifiable, at least on first glance. Since Smarty uses curly braces to differentiate its constructs from non-Smarty content we can quickly identify them in the template and handle them accordingly with care.

For illustration purposes, let's assume that your organization finds the sentence **Please print this receipt for your records** too staid for its youthful constituents. You want to replace it with **Just wanted to say thanks and let you know we got your payment**. Since the text is between opening `{ts}` and closing `{/ts}` tags, changing it will not cause any problem.

Let's make the same change in the HTML version now. We start by putting our cursor in the text area field and use our browser to search for "print". We find the same line, more or less, as there is a minor variation with receipt having been replaced by confirmation. Once again, the text is between opening `{ts}` and closing `{/ts}` tags; so we can make this change without breaking the site.

Having made the same change in both versions of the message template, we click on **Save**.

We now see the new options beside this system message template: **Revert to Default**, and **View Default**.

In general, when making changes to system messages, it is a good idea to test out any change as soon as possible, preferably on a non-production server if you have one available. If there are problems, then you can revert back to the default version of the template.

Recording external e-mails

When sending e-mails using an e-mail client unconnected to CiviCRM, it is still possible to have the CiviCRM system post the e-mail as an activity to every contact in the **From**, **To**, and **CC** lines. This simultaneously lets people use their preferred e-mail clients while having CiviCRM accumulate a relatively complete record of interactions with constituents.

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Here is how to set up the auto-filing e-mail feature:

1. Click on **Administer** | **CiviMail** | **Mail Accounts**.
2. There should be one row with a check in the **Default?** column. Note the values for that mail account.
3. Create another e-mail account on your mail server. Give the account an appropriate username such as activefiler. Click on **New Mail Settings** and fill in the account with the same values as the default account use **activefiler** as the **Name**, **Username**, **Localpart** (if this was non-blank for the default account), and enter the password for the newly created e-mail account.
4. Test accessing the new account in e-mail software using the settings just entered.
5. Try sending it to the account to ensure that the mail is being received.
6. While there is an e-mail in the account, try hitting the following URL in a browser to ensure that the e-mail **is not inadvertently processed** (the values for password and site_key are explained in *Chapter 3*, *Installation, Configuration, and Maintenance* in the *Setting up cron jobs* section):

   Drupal: `http://domain/sites/all/modules/civicrm/bin/EmailProcessor.php?name=activefiler&pass=password&key=site_key`

   Joomla!: `http://domain/administrator/components/com_civicrm/civicrm//bin/EmailProcessor.php?name=activefiler&pass=password&key=site_key`
7. While there is an e-mail in the account's inbox, try hitting the following URL in a browser to ensure that the e-mail **is correctly processed** (the values for password and site_key are explained in *Chapter 3* in the *Setting up cron jobs* section):

   Drupal: `http://domain/sites/all/modules/civicrm/bin/EmailProcessor.php?name=activefiler&pass=password&key=site_key&emailtoactivity=1`

   Joomla!: `http://domain/administrator/components/com_civicrm/civicrm/bin/EmailProcessor.php?name=activefiler&pass=password&key=site_key&emailtoactivity=1`
8. The e-mail should be moved from the inbox and put in a new subfolder entitled `processed`.
9. Check the CiviCRM install to ensure that there is an e-mail activity created for each contact listed in the **FROM**, **To**, and **CC** lines.

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Once you've confirmed that the e-mail is processing correctly, you should set up a cron job to process the URL on a regular basis. Once that is in place and tested, anyone can have their e-mails automatically filed in CiviCRM by CCing or BCCing the `activefiler@example.com` e-mail address.

When e-mails are processed by the script, the match to the contact is made based on the e-mail address. If the e-mail address does not exist in the system, a new contact record will be created. This has the potential to create partially complete contact records in your system very easily. Consequently, you should only use this e-mail address with staff; and never publicly expose the e-mail address lest you risk populating your database with bad records.

Summary

This chapter outlined how to use CiviCRM to improve how you communicate with your organization's constituents. The first section focused on the broader topic of how communications should be aligned with the organization's overall CRM strategy.

Subsequent sections gradually built from sending an e-mail to one or a few constituents to sending out bulk e-mails to hundreds or thousands. Not all of the focus was on e-mail communications. We also looked at using CiviCRM to print labels for postal mailings, recording those mailings as activities for all the recipients including a softcopy of the letter, and printing personalized letters.

We then looked at strategies for list building using CiviCRM profiles to enable users to subscribe to bulk e-mail products like newspapers. While implementing profiles in recipe-style format, we took into consideration the differences and options present in Drupal and Joomla! installations.

As lists are being built and constituents are communicated with, the role of CiviCRM groups become clearer. To that end, we reviewed basic strategies for organizing constituents into groups used for communication efforts.

The chapter wrapped up with some loose end topics that are important for your overall communications branding and effectiveness. We reviewed automated messages generated by CiviCRM and briefly looked at how Smarty templating is used to construct them.

Using a script that ships with CiviCRM we set up an e-mail box that can be polled by the system and have e-mails processed as activities in contact records (based on the **FROM**, **To**, and **CC** fields). This is a powerful way to connect your staff's desktop e-mail client software (and daily communication) with the CRM.

In our next chapter, we'll look at a number of ways to use CiviCRM to support fundraising in the non-profit sector.

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7
Fundraising: Money for Your Mission

To accomplish their mission, non-profits need money to pay their operating expenses, (salaries, rent, office and other expenses), and support projects and programs that advance the purpose of the organization. This chapter will focus on using CiviCRM to raise funds through donations to support this work. In addition, we will touch on other forms of revenue generation, such as grant-writing, membership development, and sales of products or services.

The need to actively raise funds is a necessity many in the non-profit and advocacy world wish they could ignore. Part of the reason they work or volunteer in the non-profit world is because of its orientation toward mission-based work rather than a profit-based bottom line. Nonetheless, your organization needs money to accomplish its mission and raising some or all of those funds through donations is generally essential. Thankfully, CiviCRM is good at helping organizations fundraise.

This chapter is oriented towards fundraisers, those who support them with IT, communications and other services, and those to whom they report such as Executive Directors. To help you raise money better with CiviCRM, this chapter is generously sprinkled with sections and tips on fundraising approaches as well as on how to use CiviCRM. When marketing your organization and its services and products for fundraising purposes you will also find other chapters useful, particularly those that discuss contact targeting, communication, and outreach techniques.

In this chapter, we will cover:

- Developing a fundraising plan
- Selecting an online payment processor
- Initial configuration of CiviContribute and CiviPledge
- Manually recording donations and pledges

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- Finding, examining, and acting on contributions and pledges
- Implementing a fundraising appeal

In the first section of this chapter, we provide an overview of how to create a fundraising plan and how CiviCRM plays a role in developing and executing the plan. If your interest is focused on learning more about how to administer and operate CiviCRM in fundraising activities, feel free to skip the opening section. If you are looking to quickly get online contributions up and running, start with the section on choosing a payment processor, then proceed directly to the last section on creating an online contribution page. Getting your payment processor account created and approved may take days or weeks while the rest of the configuration is a matter of minutes or hours. If you're using CiviCRM for offline fundraising only, you will not need a payment processor but will still need to configure CiviCRM for fundraising as discussed in the third section.

Developing a fundraising plan

Larger non-profits can benefit from hiring a staff person or two with a degree or diploma in fundraising and development who know how to develop and deliver a fundraising plan appropriate to the organization. Smaller ones may benefit from hiring a fundraising specialist as a consultant to help with their planning. The unfortunate reality is that many small and even medium sized non-profits place this responsibility on those without specialized training, and often aren't able to provide adequate training budgets for them, given the competing priorities. If that describes your organization, plan on buying a fundraising book or spend a few evenings Googling how to develop a fundraising plan.

Templates for fundraising plans will vary by author and type of organization. The common elements include:

- A version of the organization's mission
- An analysis of the historical and current fundraising situation of the organization
- A statement summarizing the case to give to the organization
- Short and long term goals for fundraising, usually broken down by type of giving or fundraising program

High-level plans for one to three years will be translated into work plans by laying out tasks with specific timelines for implementing programs and appeals across different channels.

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CiviCRM's reporting and analysis tools can help in your analysis. The case for giving will undergird the creative material (such as text, graphics, and others), that will be developed for various programs and included in CiviCRM's public-facing fundraising pages.

Segmenting by category

Market segmentation is the process of dividing your potential donor audience based on certain characteristics and attributes. Doing so allows you to customize your message and method of communication to more effectively reach each subset of your market. In fundraising parlance, common ways of segmenting donor revenue by (slightly overlapping) categories are:

- One-time gifts
- Pre-authorized monthly gifts
- Major gifts and planned giving
- Legacy or bequest giving
- Tribute gifts (in memoriam or in honor of)
- Events (often sub-divided by event, such as Run for the Cure, an auction, or dinner)
- Memberships and subscriptions
- Corporate sponsorships, memberships, and partnerships

Other forms of fundraising may be important to your organization, including grant-writing to foundations or government, or contests. In addition, some non-profits have fundraising revenue from merchandise sales of branded products such as T-shirts or mugs.

This chapter focuses on fundraising segments that raise the most money for not-for-profit organizations, and touches on how to support other fundraising categories with CiviCRM.

Capital campaigns and special appeals may receive donations that fall into any of the segments listed above. However, it is often useful to separate the revenue for those campaigns into separate line items in your fundraising plan and accounts since the method used to raise those funds and their stated purpose is generally different than on-going fundraising for normal operations.

We will look at practical ways to count prospects in your existing donor and contact database in the *Counting prospects with Advanced Search* section.

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Segmenting by channel

The major channels (methods) of fundraising are:

- Direct mail
- Telemarketing
- Online
- Direct dialog or face-to-face

CiviCRM can assist in all four of these channels. Different activities in CiviCRM are used in these channels and we will be devoting sections to each one.

Cultivating prospects is essential for good CRM and fundraising strategies. Excellent prospect development channels exist in the offline world, including media events, advertisements, and brochure leave-behinds. You should consider giving a prominent role to the other channels in your CRM and fundraising plans. CiviCRM can assist in targeting via these channels. However, make sure that your CRM and fundraising plans are not centrally about how to use CiviCRM, rather they are about underlying development strategies.

Some minor channels such as direct response television and kiosks will not be discussed. Supporting them with CiviCRM can be understood as variations of telemarketing (inbound rather than outbound) and direct dialog. SMS messaging is touched on as an extension of online fundraising.

Programs

A fundraising program is usually defined by the primary objective of getting a segment of donors to take some action. Each program may have one or more campaigns, where a campaign may involve several communications centered on a single appeal, such as e-mails, direct mail, and telemarketing calls to renew a membership before it expires.

Common types of programs you may want to include in your fundraising plan are listed below. Only a large development office with a big staff would be able to do a good job on many separate programs. Smaller and newer operations should have fewer. We believe a prospecting program is essential for all fundraising plans, and we'd encourage those who have renewal but not monthly giving programs to consider starting the latter.

Below each type of program, we've indented typical strategic considerations or suggested approaches for developing or improving the program. These suggestions are not going to be appropriate for everyone, but may help you brainstorm ones that are appropriate for your organization's fundraising plan:

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- **Prospecting** (acquiring new donors, usually a break-even activity at best): Extra stewardship in the form of a special "thank you" and additional communication about what your organization does with the money donated will help to develop these relationships.
- **First time renewals**: First time givers deserve extra attention to encourage the second gift and cement an on-going giving relationship.
- **On-going renewals** (getting a new donation from those who gave last year): Encourage donation upgrades from the previous gift.
- **Conversion of one-time donors to monthly donors**: Multi-givers (more than one donation in the last year) and multi-year givers are good prospects for this kind of program.
- **Upgrading monthly donors**: After a year of monthly donations and regular communication about what the organization is doing with the donations, consider asking for an upgrade to a higher level.
- **Prospecting for large donor clubs** (for example, a President's Circle for those giving over $1000 per year): Investing the time and resources to set up large donor clubs with special access privileges for VIPs, events and so on is a good way to reward and motivate higher levels of giving. Total annual giving in the past as well as intelligence about ability to give are good ways to create this prospect segment.
- **Upgrading between large donor** clubs: An end-of-year appeal for additional one-time donations to take contacts who are close to the next level of club up to it can be effective. Using the club benefits to encourage larger monthly donations is also a standard practice.
- **Special appeals**: Special appeals may be useful when there is extensive news coverage of an event or chance to respond to an important opportunity/ threat. If used too frequently, they can become ineffective.
- **Capital programs**: These programs should be researched and planned to ensure that the project costs will be covered and the fundraising targets reached. Capital programs are often multi-year efforts and multi-faceted.
- **Renewal of lapsed monthly donors**: This is a high-yield activity that helps address issues like expiry of credit cards and donors moving their bank accounts.
- **Renewal of lapsed donors**: Another program with good long-term yield. You may find it cost-effective to telemarket lapsed donors in order of their most recent year of giving and ending when the cost per renewed donor reaches the cost of acquiring a new donor.
- **Acknowledgement programs**: Demonstrating appreciation for donations through thank you calls and gifts may prove a good investment.

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Money, donors, and prospects

Given the goal amount for a fundraising program, industry standards can be used to develop the number of donors at different levels and the number of required prospects. This amounts to a pyramid with a few donors at the top giving the bulk of the money and many at the bottom giving a smaller portion of the total; typically, 80 percent of the money raised in a campaign is given by 20 percent of the donors. This inverse curve holds across many organizations and levels of giving, and is likely to be evidenced for total donations by donor to your organization. For example, 25 percent of Canadian charitable donors gave 82 percent of the total donation (`http://www.statcan.gc.ca/daily-quotidien/090608/dq090608a-eng.htm`).

Googling for "gift range calculator" yields several good results in the top 10 results. The single top-level donation may be 10 to 25 percent of the total amount to be raised in the campaign. Generally, as the gift size halves, the number of expected gifts doubles or triples. It can be convenient to segment levels by reducing the donation amount by a quarter or a third rather than a half, with a corresponding reduction in the number of expected gifts.

Well-established fundraising programs can expect to receive a larger percentage from larger gifts, and newer programs can expect to depend on smaller donations for a larger percentage of their goal.

In traditional capital and major gift fundraising, you need about four prospects (contacts for whom you have some reason to believe that they can give at that level) for each donation at a certain level. More sophisticated gift range calculators factor in the likelihood of prospects at one level ending up giving at a lower level; this reduces the number of prospects expected to be required at lower levels in the gift range pyramid.

A range of communications and outreach activities are deployed to convert the campaign prospects to donors such as e-mails, letters, phone calls, meetings, and so on. Each of these appeals has a much lower conversion rate than 25 percent. The plan for the type, number, and order of the communications often varies by segment, with higher value segments getting higher touch communications like personal visits, meetings, and telemarketing. Successfully raising significant amounts of money from low-value contributions usually involves greater automation and less paid time by humans. Volunteer time is often a precious commodity for non-profits that is best spent on higher value activities.

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Benchmarking

As you develop your fundraising plan or review your existing one, it is useful to compare it with benchmarks and surveys. Direct mail remains the mainstay of fundraising at large established non-profits, bringing in over 80 percent of donations according to a recent study (`http://www.slideshare.net/artezinteractive/artez-interactive-from-donor-acquisition-to-fundraising-performance-benchmarks-for-nonprofits`). However, it is notable that the average online donation received and the five-year value to the organization of online donors is greater than direct mail donors.

Assumptions in your plan about the size of lists that need to be contacted in order to generate a certain number of donations can be calibrated against benchmarks. Generally, the lower touch/lower cost communication channels have lower conversion rates. For example, one recent survey found that e-mail fundraising conversion rates were 0.13 percent (`http://www.e-benchmarksstudy.com/2010.html`), while the conversion rate for a direct mail donor solicitation to a list of previous donors tends to average around one to two percent. Good surveys provide actionable recommendations, such as this one's advice to focus on improving click-through rates in order to join the top-performing group of e-mail fundraisers.

So far in this section, we've been focusing on a top-down approach for planning your fundraising, moving from fundraising goals down to the number of prospects required in each segment. CiviCRM has a number of reports that provide an analysis of how your organization has been doing in its own fundraising, as we'll see below in the *Reporting* section and in reports described in other parts of this book such as the chapters on events, membership, and communications. These reports provide a bottom-up analysis of historical data for your organization that should be integrated with the results of the top-down planning in two ways:

- First, you should compare your organization's metrics against benchmarks like those mentioned above to help identify areas of strength and weakness. Larger surveys tend to have more reliable data while ones for your sector and region may provide more appropriate comparisons despite their smaller sample. These comparisons should help provide elements of a more general SWOT analysis (internal strengths and weaknesses, and external opportunities and threats) to inform your fundraising plan. Where have we done better or worse in the past compared to standard metrics? Do we know why? How can we address our weaknesses and leverage our strengths?

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- Second, you should review your existing donor base by segment to determine whether the number of prospects presumed by your plan can feasibly be attained. Your plan may need to be adjusted to include actions to improve the size of prospect lists through list rentals, prospect development activities like asking board members to review their contact lists, or research into high net worth individuals in your area or with interests in your sector. When all those options are considered, you may decide your fundraising goals need to be raised or lowered for particular segments or programs.

The rest of this chapter will explain how CiviCRM, and particularly its CiviContribute component, can be used to implement your fundraising plan. As a result of the particularities associated with raising funds via events and through memberships and subscriptions, and the special support that the CiviEvent and CiviMember components provide, later chapters will be devoted to using CiviCRM for those types of fundraising.

Selecting a payment processor

CiviCRM may be used for fundraising with or without processing online contributions. For example, you could use CiviCRM to support a direct mail and telemarketing operation and require online donors to mail in checks. You can also accept in-kind donations online without setting up a payment processor. However, the power and potential of the software is better realized when you implement a fully integrated online payment system.

Some organizations continue to use external online donation systems as they begin to use CiviCRM, which involves transferring the transactions to CiviCRM in order to use it as their centralized CRM for segmentation and reporting. This is a cumbersome approach given the ease of using CiviContribute to process online donations.

Most organizations doing online donations, event registrations, and membership and subscription payments will find it worthwhile to set up online payment processing in CiviCRM.

Payment processors, sometimes known as payment gateways, assist in transferring payments from payers to you, the payee receiving the funds. CiviCRM relies on the processor to do the complicated work of connecting banks and credit card/debit card companies together to make sure money is properly moved from the donor's account to yours. The CiviCRM core team and the CiviCRM community have worked to create plugins for about a dozen payment processors. Information on each, and links to configuration pages for some of them, can be found at `http://wiki.civicrm.org/confluence/display/CRMDOC32/CiviContribute+Payment+Processor+Configuration`. In order to use CiviCRM for online financial transactions, you'll need to choose one of these payment processors, set up an account with them, and configure CiviCRM to work with it.

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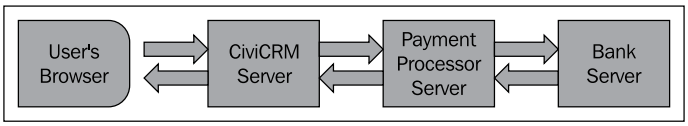
If you are just starting out and trying to decide among several processors available to you, the number of considerations to take into account when choosing a payment processor can be bewildering. We recommend starting your decision by determining which ones are available in your country. For most CiviCRM users, you will have a variety of options.

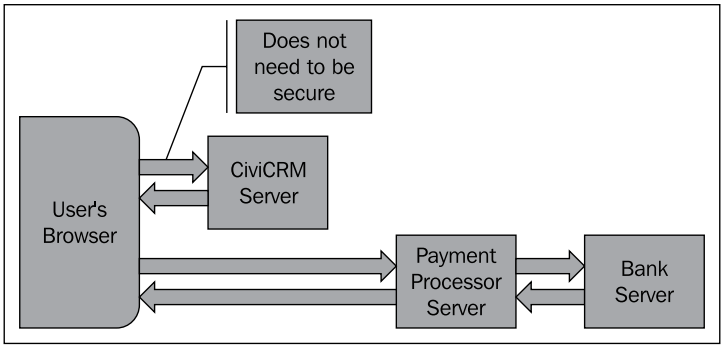
You may also find that none are available in your country or that you would like to use one that is not yet supported. For example, you may be using a payment processor for your point-of-sale terminal or check processing, and would like to add online payment processing to your existing account with them. There are instructions available for developing new payment processor plugins for CiviCRM (visit `http://wiki.civicrm.org/confluence/display/CRMDOC32/Creating+Additional+Payment+Processor+Plugins`).

Most payment processors provide technical documentation to assist developers in creating a plugin for packages like CiviCRM, since it increases their volume of business. A variety of consultants are available to assist you and the community in creating and supporting a plugin for other payment processors (`http://civicrm.org/professional`). If you find that there are compelling reasons for using a different one, others might want to use it as well.

E-commerce websites, including sites that accept donations to non-profits, interact with payment processors in two common ways as illustrated in the following two diagrams:



In the first architecture, the e-commerce website itself securely handles the credit card or other financial account information by talking to the payment processor behind the scenes, while the user waits for payment to be processed.



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The second approach, is a low-end one in which the e-commerce website interacts with an external payment processor that serves its own user-facing pages. In this method, your e-commerce website calculates what needs to be paid, then sends the user to the payment processor's secure website where the payment is handled, after which the payment processor site sends the user back to the e-commerce site.

If configured properly, both systems will transmit sensitive information like credit card numbers in securely encrypted methods. Since CiviCRM does not store sensitive information regarding the transaction, both the methods offer good e-commerce security.

While both approaches are viable and effective, there are pros and cons to both:

	External Hosting	**Internal Hosting**
SSL certificate purchase and setup required	No	Yes
Potential security risk to credit card data	Extremely low	Very low
Available on low-end shared hosting	Yes	No
Need to keep your server secure	High	Very high
Loss of your visual branding	Yes	No
Donors exposed to possibly irritating payment processor messaging	Yes	No
Usability	Poorer	Better

We recommend using a payment processor that offers internal hosting for all but the lowest volume sites. If you are new to online payments and don't yet know what kind of volume your constituents will generate, consider implementing the simpler external hosting solution until you can gauge the response and determine if internal hosting is worth the additional cost.

Internal hosting requires you to obtain and set up an SSL certificate because your site must communicate securely with your users' browsers to process their credit card details. External e-commerce hosting, where your users are transferred to your payment processor's site to process the transaction, is secured using their SSL certificate.

SSL is a communications protocol that allows your users' browsers to talk to your server without anyone listening in. It does this by securely encrypting the information that goes back and forth using special keys. Internet users are becoming familiar with the fact that pages with `http://` at the start of their address are not secure, while those with `https://` can be secure. Browsers also display a small lock icon when displaying secure pages:

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The cost of SSL certificates continues to come down as they are commoditized, and the ease of installing them continues to increase. Hosting providers like **RimuHosting** remarket **RapidSSL** certificates for as little as USD$40 including installation. Security companies continue their efforts to create demand for higher-priced SSL products with more features, such as dynamic "Certified by" logos for your site, having your organization name appear in the browser address line, and higher levels of warrantee. Try shopping around for a good price on whatever certificate you select (`http://www.namecheap.com/ssl-certificates` is a good source at the time of writing this book).

While considering different payment processors, other factors come into play as well, such as which credit cards are supported, the cost of different options, and whether they support advanced features such as recurring contributions. In our view, it rarely makes sense to save money on payment processors at the expense of usability since just a few lost donations are generally more "expensive" than the savings. However, there are often significant differences in the cost of payment processors that provide the same level of usability. These differences are highly dependent on the number and size of donations and what credit card or other payment instrument is used.

One factor that can play a significant role in cost is the payment processor and whether it requires you to have a merchant account. These usually involve separate charges for your bank, though sometimes they may be bundled into the payment processor's charges. Automatic transfers into your merchant account instead of requiring regular manual interventions to get money out of your account at your payment processor can prove useful and worthwhile for higher volume organizations.

Here are some of the charges you should ask about when comparing the cost of different options, even though they may be minimal for some processors and/or merchant accounts:

- Initial payment processor account setup charge
- Initial merchant account setup charge
- Consulting or staff time to deal with payment processor and merchant account for setup and approval
- Fixed monthly and/or annual costs for payment processor and merchant account
- Commissions as a percentage of charges for payment processor and merchant account, sometimes with discounts for higher volumes
- Per transaction charges for payment processors and merchant accounts
- SSL certificate cost for the first year and annual renewal costs
- SSL installation cost for new and renewed certificates

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Use an estimate of the number of transactions and their value per month to compare the processors. Higher fixed monthly costs paired with lower commissions and per transaction charges favor organizations with stronger online fundraising, while ones with small or nascent online fundraising tend to benefit from paying lower fixed charges and the accompanying higher percentages.

Organizations without deep experience in fundraising tend to overlook the importance of a steady stream of income from monthly pre-authorized payments and the higher amounts of total donations they engender from donors. We strongly encourage making recurring payments a priority in fundraising plans, and as a result believe that you should select a payment processor with a plugin that supports them, or consider funding the enhancement of plugin that has yet to implement that functionality for a processor. For organizations with a good prospect list for pre-authorized payments, any extra charges for this functionality will be a good investment.

PayPal Standard and PayPal Pro are two of the most widely available payment processors, and the ones that receive the best core CiviCRM team support. While PayPal Standard is a widely available, inexpensive, and an easy-to-implement option, you should be aware of several caveats before you select it. As an external payment processor, it suffers from poorer usability that results in a higher rate of abandonment, as users are confused with the redirection to an external site for the processing step. This is more than just lost revenue, as users often hit the "back" button when confronted with payment processor usability problems which may cause unexpected results in CiviCRM (or other e-commerce applications), especially for event registrations. These problems may require staff time to sort out.

In fact, the poor usability of PayPal Standard goes well beyond the poor usability of other external processors. Some of this appears to be due to deliberate decisions by PayPal to discourage direct payment with credit cards and encourage people to set up and always use a PayPal account. Users who try to pay with credit cards rather than a PayPal account get security warnings that are debatable. If people have, at any point, set up a PayPal account, it prevents them from paying directly with a credit card. This can make it difficult for users to understand how to pay. In addition, users with PayPal cookies in their browser for any reason may also experience problems completing their transactions.

Be aware that PayPal places a three to five-day delay on transferring funds into your bank account. While some delay will always be expected, PayPal's tends to be longer than many other solutions. Since PayPal is often targeted by fraudsters, their increased aggressiveness in combating fraud results in "false positives", meaning that your account may be suddenly frozen for a variety of reasons without warning.

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Organizations claiming non-profit or a charitable status seem to have additional security scrutiny. Further, if your bank account name does not exactly match your PayPal account name, you may have difficulty getting your money out as PayPal will not release funds from a PayPal account in the name of John Smith to a bank account under Judy and John Smith's name. Obviously, having your funds frozen or unavailable for undetermined periods can cause significant issues in your normal operations.

We recommend getting started early on setting up a payment processor account and a merchant account, if necessary. This can take days or weeks to complete, and may involve providing the founding documents of your organization, which may be in a safety deposit box, and official certification of non-profit status.

Initial fundraising configuration

Two components in CiviCRM are addressed solely to fundraising matters: CiviContribute, which handles donations, and CiviPledge, which is designed for pre-authorized payments or promises to make future payments. This section describes how to configure them.

As CiviContribute supports the financial aspects of the CiviEvent and CiviMember components, you will need to configure it to record or accept payments for event registrations, memberships, and subscriptions, even if your organization does not accept pure contributions but only payments in exchange for such things.

Configuring CiviContribute

The first task in configuring CiviContribute is to turn on the component if it is not yet enabled:

1. Click on **Administer** | **Configure** | **Global Settings** | **Enable CiviCRM Components**.
2. If **CiviContribute** appears in the left column, highlight it, and then click on **Enable**.
3. Click on **Save**.

Next, make sure that information about contributions is displayed in appropriate places throughout the system:

1. Click on **Administer** | **Configure** | **Global Settings** | **Site Preferences**.
2. Ensure that **Contributions** is checked for **Viewing Contacts**, **Contact Search**, and **Contact Dashboard**.
3. Click on **Save**.

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Configuring contribution types

Each contribution in CiviCRM has a contribution type associated with it. The main benefit is identifying and aggregating contributions for reporting, and for entry or importing into your accounting system. Secondarily, they assist in tracking which of the funds received are deductible for tax purposes.

In order to configure it, click on **Administer** | **CiviContribute** | **Contribution Types**. Review the list of contribution types to see if they match your needs for reporting and accounting, then take one or more of the following actions:

- To **Disable** or **Delete** a contribution type, click on the respective link to the right of the relevant contribution type
- To edit a contribution type, click on the **Edit** link to the right of its name, enter or adjust the values in each field, and click on the **Save** button
- To add a type, click on the **Add Contribution Type** button and enter the relevant information

Check with your bookkeeping and accounting personnel to get their perspective on what types they would like. The chart of accounts in your accounting system will have one or more revenue accounts or sub-accounts to handle the money tracked in CiviCRM. Use the **Accounting Code** field to match contribution types to your accounts; this is particularly important if you plan to export from CiviCRM and import into your accounting software.

As of version 3.2, only a single contribution type is associated with a payment page, unless you are including membership options and have a payment processor that supports multiple transactions. In this case, the membership fee will be recorded based on the contribution type configured with the membership type, and any additional contributions will be recorded using the contribution type associated with the page.

If you expect to set up more complex pages that accept and record payments for different types of funds, you will not be able to separate revenue associated with one of these payments into different sub-accounts. For example, an event signup page has only a single contribution type that is used for all paid items, including optional items like meals and special sessions. While your bookkeeper may need to separate these funds into different accounts for bookkeeping purposes perhaps because the meal and optional donation may not be deductible while the event fee is, CiviCRM will not natively track it as such.

If this level of fine-grained accounting separation is required by your bookkeeping, you might consider creating a contribution type to "catch" those payments that must be segmented at a later time. If you are not yet certain what your needs are, you can always leave the defaults for now, discuss it with your bookkeeper, and return at a later time to add new contribution types.

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CiviCRM is also currently limited in the fact that it can only attribute a single contribution payment to memberships or event registrations. However, work is currently being done to extend the data model to accommodate partial payments and other bookkeeping and accounting enhancements. This could potentially be used to record multiple distinct payments, each with their own contribution type, against a single "purchase", such as an event registration. Watch the CiviCRM blog for more information as this functionality is developed.

Configuring payment instruments

CiviCRM stores information about how payments are made as payment instrument information. Payment instruments are the method of payment, such as checks, cash, EFTs (electronic funds transfers), credit cards, and debit cards. Your organization most likely does not support all of these default instruments for accepting payments.

To review and adjust payment instruments:

1. Click on **Administer** | **CiviContribute** | **Payment Instruments**.
2. To **Disable**, or **Delete** a payment instrument, click the respective link to the right of the relevant payment instrument.
3. To edit a payment instrument, click the **Edit** link to the right of its name, then enter or adjust the values in each field, and click on **Save**.

Configuring accepted credit cards

There is a separate interface for specifying what credit cards may be accepted (for example, Visa, Amex). Do not confuse payment instruments with individual types of credit cards. In particular, do not create a separate payment instrument for each one. Instead, do the following:

1. Click on **Administer** | **CiviContribute** | **Accepted Creditcard Options**.
2. To **Disable**, or **Delete** a credit card option, such as Amex, click on the respective link to the right of the relevant credit card option.
3. To add a type, click on the **Add Accept Creditcard** button and enter the relevant information.

Be sure to review your payment processor options and limitations when setting up your system to confirm which card types they accept.

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Configuring a payment processor

In order to accept payments online, CiviCRM requires you to configure a payment processor, as discussed earlier in this chapter. Different payment processors have different parameters, options, and setup instructions. To determine how to set up and test your account with specific payment processors, visit `http://wiki.civicrm.org/confluence/display/CRMDOC32/CiviContribute+Payment+Processor+Configuration`, click on the name of your payment processor, and follow the relevant instructions, or contact the processing company for more guidance.

In future versions, payment processor integration will be handled through an extension mechanism. You may need to search elsewhere on `http://wiki.civicrm.org` for the name of your payment processor as that system is implemented.

For configuring CiviCRM to work with the payment processor, follow these steps:

1. Click on **Administer** | **Configure** | **Global Settings** | **Payment Processors**.
2. Enter a **Name**, perhaps a **Description**, and the **Processor Details** for the **Live** and **Test Payments** as per the instructions for your payment processor.
3. Click on **Save**.

If you have chosen a payment processor that requires your site to have an SSL certificate, you will need to purchase and install one. If you are using a hosting provider, they are likely to suggest preferred certificates and offer installation services for a fee. If you do not have a managed hosting arrangement that provides this service, you will need to have someone with system administration skills and sufficient server access install it. The technical procedures vary between operating systems and by certificate issuing authority, and are non-trivial for those lacking system administration experience.

Low cost and mid-range SSL certificates support only a single domain or sub-domain. This includes distinguishing between the root and www form of a domain. For example, a certificate for `https://www.mydomain.org` will not work for `https://mydomain.org` and vice-versa. You can purchase and install certificates for both domains, or buy a higher priced wildcard certificate that covers both.

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However, we highly recommend redirecting all of your website traffic to one or the other domain names and using that form consistently in your marketing materials. It can also help with session management in your CMS. You or your hosting technical people should redirect all traffic to one of the two addresses (refer them to the bottom of `http://www.nurdletech.com/https.html` for ideas on how to do this with two IPs on Apache servers). The redirection will mean people visiting `https://www.mydomain.org` will be seamlessly redirected to `https://mydomain.org`. This also works if they have a longer URL with something after the domain name, such as `https://www.mydomain.org/section/page`, which will redirect to `https://mydomain.org/section/page`.

Committing to a single domain form and using it consistently is important for three other reasons: it presents a more consistent branding for your organization, it improves search engine rankings by consolidating results for all ways of referring to a page, and it improves browser session management. When a user logs in to your website, they create a session which recognizes who they are to the system. That session is stored based on the website URL. If the URL changes (for example, from `www` to the root form) the session may be lost. That can disrupt multi-step form processing, such as an event registration. Forcing a single "canonical" domain form will improve the reliability of session handling.

In either case, after the request for a certificate has been created and submitted, an e-mail will be sent to an address associated with the domain to be secured asking for approval to issue the certificate. Sometimes, setting up e-mail for these addresses or getting access to them can be a hassle that delays the issuance of the certificate. Check with your hosting provider or certificate issuing authority to determine the list of e-mail addresses that can be used to approve the issuance. Cheaper SSL certificates often have greater restrictions on the e-mails that can approve the certificate.

If your payment processor is not external and thus relies on your site's SSL certificate for secure transmission of sensitive account information, it is essential that you prevent non-secure access to your contribution pages that accept sensitive data like credit card numbers. Once you have tested your SSL certificate and confirmed it is working properly by accessing your site with `https://mydomain.org`, you must do the following:

1. Click on **Administer** | **Configure** | **Global Settings** | **Resource URLs**.
2. Select **Yes** beside **Force Secure URLs (SSL)**.
3. Click on **Save**.

At this point, CiviContribute is configured and you can use it to accept online payments for donations, memberships, or events. We strongly encourage you to carry out the following:

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1. Run a test payment or two for a small amount on a contribution page which can be configured as described in the *Creating an online contribution page* section towards the end of this chapter.
2. Ensure that the payments are received by the payment processor.
3. Verify that the funds are deposited properly in your bank account, either automatically or manually as the case may be.

Note that PayPal and some other payment processors have sandboxes that are more difficult to use than their production systems, so it can be faster and less problematic to just configure and test using real payments against their live servers.

It is also a good idea to have your bookkeeper review things at this point to make sure they can properly integrate online payments into your accounting procedures. Sometimes, there are issues with how payment processors batch transactions from online payments with those from point of sale terminals that can make things difficult to track. You may need to review how specific transactions stored in CiviCRM can reliably be correlated with deposits in your bank account and vice-versa. To review a report that may prove helpful in this regard, click on **Reports** | **Bookkeeping Transactions Report**.

Configuring premiums

Premiums are thank-you gifts that may be provided to donors to encourage them to donate. They are often used as an incentive to give more. For example, anyone giving $50 can receive a coffee mug with your organization's logo, while those giving $100 can choose to get a T-shirt with the logo. All premiums are specified on a site-wide basis before being enabled for particular CiviContribute pages. Constituents donating through premium-enabled contribution pages will always have the option of declining premiums. By making these gifts optional, you reduce wasted resources on unwanted premiums.

There is no need to configure premiums in order to use CiviCRM for fundraising, and if you are just getting started, you should likely focus on more essential basic functions. As particular appeals begin to make use of premiums or new premiums, you will need to configure or reconfigure your site-wide premium options before they can be enabled for particular pages. Here is how to add a premium:

1. Click on **Administer** | **CiviContribute** | **Premiums (Thank You Gifts)** or **Contributions** | **Premiums (Thank You Gifts)**.
2. Click on **Add Premium**.
3. Enter information in the fields as it should be displayed to potential donors, starting with **Name**.
4. **Description** can be promotional text or just an explanatory description.

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5. **SKU** is useful if the item is for sale elsewhere on your site.
6. For **Premium Image**, use the display image and thumbnail from these locations on the web option to display product images from your own site (for example, in a Drupal Ubercart store), as this will prevent them from getting out of sync when the store images are updated.
7. **Minimum Contribution Amount**: CiviCRM will enforce this minimum wherever the premium is enabled, displaying an error message if someone asks for the premium but doesn't contribute at or above this amount. You can create another premium for the same item if you would like to set a different minimum contribution amount for it on a different contribution page.
8. **Market Value**: Some jurisdictions require tax-deductible charitable receipts to be issued only for amounts that exclude the fair market value of any premiums provided. If that applies to your organization, and this premium will be used on pages accepting tax-deductible payments, enter a value here.
9. **Actual Cost of Product**: Enter a value here to improve the calculation of the net return from offering the premium and also the overall appeal.
10. **Options**: Provide a comma-separated list of options, such as size or color. The comma-separated list ignores line breaks, so text after the last comma on one line is put together with text at the beginning of the next until a comma is encountered. If you want to provide options for two aspects of a product, such as both color and size, you either must enter every combination as a separate option or do some custom programming.
11. **Subscription or Service Settings**. Custom programming can allow the information collected here to be used to provide temporary access to downloadable files such as reports or songs in your CMS or to memberships or subscriptions managed by CiviCRM. Alternatively, staff can manually administer such benefits once they receive an e-mail or other notification of a donation.
12. Click on **Save**.

You can return to add, modify, disable, or delete premiums at any time. If premiums are shared across multiple contribution pages, be sure to understand the impact of any modifications before you begin editing them.

Configuring price sets

Price sets are used to construct more complex sets of donation-level options. In most cases, you will create a simple list of donation levels and include the option for donors to enter their own custom amount. However, if you require multiple sets of options, or quantity-based purchasing, price sets can be used.

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Price sets can also be used for events, which is the more common application. We will review their use in that context in a later chapter.

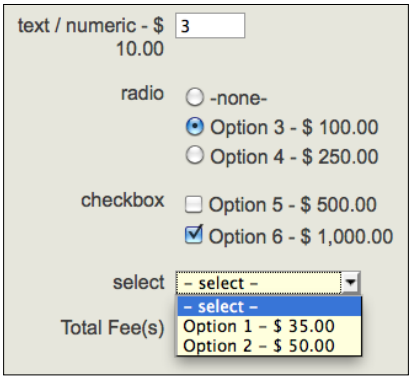
Price sets are also convenient for contributions when you have suggested donation levels that are re-used on different pages. For example, a Humane Society may have pages devoted to funds for different species (since cat lovers may give more if they know it will go to caring for cats and not dogs). Annual campaigns to increase donations may have price sets for different segments that get re-used from year to year. They also provide a way to increase the gift amount by offering a benefit for an additional amount. When you don't want the more complicated optional user interface of premiums, such as when selling sponsorships with different levels of included advertising and publicity opportunities, price sets may be more appropriate.

To configure a price set for contributions, follow these steps:

1. Click on **Contributions** | **New Price Set/Manage Price Sets** or **Administer** | **CiviContribute** | **New Price Set/Manage Price Sets**.
2. Enter text for a heading to be displayed to users above the donation amount options in the **Set Name** field, for example, **I want to help preserve natural habitat by donating**.
3. Beside **Used For:** select **Contribution** or another suitable value**.**
4. Click **Save**.

You are now presented with a form to add a field to the price set:

1. Enter a **Field Label**.
2. Select one of the four **Input Field Types** illustrated in the following screenshot:



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The **text/numeric Quantity Input Field Type** is appropriate when the user may purchase more than one of something, such as tickets for an event. Once selected, you must specify the unit **Price**.

If **Select** is specified as the **Input Field Type**, you are presented with rows into which you can enter the label and amount for option rows for the **select** drop-down box. You can also indicate which option is the **Default** value, uncheck rows you do not want **Active**, and use **Weight** values to indicate the order of the options. Click on **another choice** to display another row to enter data for additional options.

Radio and **Checkbox** have the same interface as **Select** for entering options. In addition, you can enter a value greater than **1** into options per line in order to have several options appear horizontally beside each other.

The **-none-** option on the radio type disappears when **Required** is checked for the field.

3. You can uncheck the **Display Amount** field if you don't want the amount displayed with the label. This is usually unnecessary, but can be helpful if you use your labels to indicate the amounts for each option level.
4. Use the **Order** field to specify where the field should appear on forms compared to other fields in the price set. After saving your fields, you may shuffle the order using up/down arrows in the field listing page.
5. **Field Help** can be used to display explanatory text to users.
6. **Required** can be checked to force users to enter a value.
7. If you want the field to be visible and possibly filled in by donors, set the **Visibility** to **Public**. If the field is to be used only by admin staff, set it to **Admin**.
8. You can optionally disable a field while creating it by unchecking **Active?**.
9. Click on **Save** to save the field, **Save and New** to save the field and bring you back to the same form to create another field for this price set, or **Cancel** to abandon creating this field.

If you are using price sets on contribution pages, we recommend using the first field to lay out suggested donation levels, and additional fields to up-sell additional benefits to donors. Be sure to preview and test your price set thoroughly, paying attention to what fields are marked **Required?** and how the field types impact the display and flow of the form.

Much of what we have just covered will be better understood when we walk through the configuration of contribution pages near the end of this chapter. You will see how all of the tools and options described in this chapter are combined into a publicly accessible form used to solicit contributions.

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Configuring CiviPledge

CiviPledge is a CiviCRM component that supports non-enforceable commitments for recurring payments. This is different from recurring contributions that are also supported by CiviCRM, but which actually create an authorization record with the payment processor to automatically transfer funds on a recurring basis. In contrast, pledges are promises to pay a fixed amount through multiple periodic payments.

For example, your organization might encourage existing donors to increase their total annual contribution by committing to a monthly payment which you associate with a corresponding monthly need. A homeless shelter might create a campaign to "provide five meals a month" for the year. The total annual donation is $240, consisting of $20 monthly payments.

When a pledge record is created, it consists of the total committed donations and the terms of payment, that is, number of payments and frequency (12 payments of $20). It is, however, only a promise to pay. CiviCRM provides useful tools for tracking payments, sending out reminders, and providing online payment forms. As the constituent fulfills their commitment through periodic contributions, you log the payment against the pledge record and track their progress. Once all payments are received, the pledge record can be closed.

Before implementing pledge signups, you must enable the component (it is disabled by default). Click on **Administer | Configure | Global Settings | Enable CiviCRM Components** and move CiviPledge from the left column to the right.

You may configure automated pledge reminder e-mails that will be sent to constituents prior to the due date for their next payment. Enabling this feature is done through the Contribution Page setup, where you also indicate the form that will be used for pledges. However, you must also configure a cron job to periodically check the status and due date of individual pledge records, and trigger the e-mail. See *Chapter 3*, *Installation, Configuration, and Maintenance* for a full discussion of configuring cron jobs.

Recording a contribution manually

Now that we have configured CiviContribute and have a working knowledge of the key functionality options, we are in a position to look at recording a contribution record. Part of the reason for learning how to record a contribution manually at this point is that it will provide a better sense of the wealth of information that is stored about a donation. This will lay the groundwork for a better understanding of the automation that occurs when online contribution pages automatically record contributions.

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The simplest way to record offline contributions is to record them manually. The term "offline" may be a bit misleading or confusing; it is used to distinguish between payments received and processed directly online (for example, credit card payments) and payments received through other offline means. This includes donations of any sort that are not processed by an online payment processor. Examples include cash, in-kind goods, and services received at the office, checks received by mail, credit and debit card donations outside the website such as those received by a call centre that are processed through a point of sale (POS) device, or electronic fund transfers (ETFs) conducted at a bank branch.

To record a contribution manually, click on **Contributions | New Contribution** from the main menu or the **Create New** button. From within the contact record you can click on **Actions | Add Contribution**, or click on the **Contributions** tab then click on **Record Contribution (check, Cash, EFT…)**. If an integrated payment processor is configured for your site, you will see the option to **Submit Credit Card Contribution**. That form is almost identical, except that it will include the required credit card related fields and will trigger an actual payment transaction.

Fill in the fields as follows:

1. If the method of adding the contribution has not resulted in a read-only name beside **Contributor**, then begin typing part of a name or e-mail in the **Select Contact** field. Select a contact from the resulting list that is automatically populated.
2. If the contact that made the contribution cannot be found from the contact search, click on **Create new contact** and choose one of the contact type options. This will open a popup form where you enter basic information about the contact and save the record.

The modal popup form that appears when you select a contact type is controlled by the reserved profile. You may modify the fields you wish to collect whenever this **Create New** contact option is selected throughout CiviCRM. After going to **Administer | Customize | CiviCRM Profile**, click **Fields** beside one of **New Household**, **New Individual**, or **New Organization**.

3. Select the appropriate **Contribution Type**.
4. Enter the **Total Amount** and currency type. If you have previously created a price set, you will be given the option of selecting it in order to choose from the available options.
5. Optionally enter a **Source**. This is intended to help you trace where the donor/donation came from. If left blank, CiviCRM will populate it with a few relevant pieces of data, such as who entered the contribution.

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6. Beside **Received**, enter a date and a **Time**. To remove the date received, click on the **Clear** link to the right of the **Time** field. If left blank, CiviCRM will populate the field with the current date.
7. Select the appropriate value for **Paid By**, or leave blank for an in-kind donation.
8. If **Paid By** is set to **Check**, enter the **Check Number**.
9. In **Transaction ID**, enter a unique transaction identifier if one exists, such as a bank transfer number; otherwise leave blank.
10. If an e-mail exists on file for the constituent, you will have the option of sending them a receipt by e-mail. If left unchecked, or if no e-mail is on file, you may enter a **Receipt** date and **Time**. These values are automatically filled if the receipt is sent by e-mail.
11. Select the appropriate **Contribution Status**, such as **Pending** if a promised check has not been received.
12. In **Soft Credit To**, enter part or all of a name or e-mail and select a contact from the resulting list. The concept of a soft credit is to recognize another constituent's role in soliciting and obtaining this contribution. For example, if you know that John Doe decided to contribute to your organization through conversation with Jane Johnson, you could credit Jane using this field. If the contact is owed soft credit for the contribution and is not yet in the database, create the contact in a different tab and then return and conduct a search in this field.

At this point, you've completed the most essential elements of the contribution record. If you have created any custom fields associated with contributions, they will appear below these opening fields and can be expanded by clicking on the title panel. Click **Additional Details** to open additional field options.

1. Enter **Notes** about the donation, if any. For example, "**Contact him again in December to see if he wants to make another tax-deductible donation before year-end**".
2. Enter the **Non-deductible Amount** of the donation. For example, if you are entering an auction payment of $500 for a bottle of wine with a fair market value of $350, the non-deductible amount in Canada is $350.
3. Enter the **Fee Amount**, if any. For example, a $-1.25 bank charge to process an ETF.
4. Enter the **Net Amount** as calculated from **Total Amount – Fee Amount**.
5. Enter the **Invoice ID**, if any. This could be a generated invoice number from your accounting software.
6. Enter the date and approximate **Time** for a **Thank-you Sent**.

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CiviCRM supports honoree/in memory of contributions. Click **Honoree Information** to open the fieldset. When a contribution is made in honor of or memory of another person, a contact record is created for the honoree and the contribution will display in their record (as in honor/memory of them).

1. Click on either **In Honor of** or **In Memory of**. If one was incorrectly selected, click on **Clear** to erase it.
2. Enter the **First Name**, **Last Name**, **Email** and **Prefix** of the honoree.

If you have created premiums, you will have a **Premium Information** panel that may be opened:

1. If appropriate, select a **Premium** requested by the donor.
2. If there are options for the **Premium**, select the one preferred by the donor.
3. If the premium has been shipped or delivered to the donor, enter the date it was **Fulfilled**.

Once you've completed the form to your satisfaction, click on **Save** to store the contribution, **Save and New** to store it and immediately bring up the same form to enter another contribution, or **Cancel** to abandon the record without saving.

Importing contributions

As with other areas of CiviCRM, you can import contribution data to the system directly through the interface. Access this tool through **Contributions** | **Import Contributions** from the main menu. We won't take the time to walk through the process, as it closely follows the steps outlined in *Chapter 5*, *Collecting, Organizing, and Importing Data* where we imported contacts. However, there are a few nuances when importing contributions that you should understand:

- The import mode allows two options—**insert** contributions or **update** contributions. These are mutually exclusive—if inserting, all records will be new; if updating, you must include a contribution ID column in your `.csv` file that matches existing records in the system. The update option will not simply create new records if no match is found.
- If inserting new records, you should have sufficient contact data in your import file to ensure the contacts match and merge with existing contact records wherever possible.
- Certain fields relevant to contributions are required, including contribution type and total amount.

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As with contact imports, we recommend importing a small subset of your data and reviewing carefully before importing very large sets. Field mappings may be saved and reused, facilitating this import, test, and full import process. Also be aware of server resource limitations that may restrict how many records you can successfully import in a single step. If your import file is very large, you may need to split it into smaller sections for importing.

Manually creating a pledge

As reviewed earlier, a pledge in CiviCRM is a promise to make one or more payments in the future. A pledge is **Pending** until the first payment is received, at which point its status changes to **In Progress**. Once all payments have been received, its status changes to **Completed**. If one or more of the promised payments is late, no change occurs in the status of the pledge. In this way, think of a pledge as a container for multiple, promised, distinct contribution records.

If a person promises $360 to be paid in 12 monthly installments, spaced one month apart, CiviCRM considers this to be one pledge with twelve payments (contributions) of $30.

To manually create a pledge, click on **CiviContribute** | **Pledges** | **New Pledge**, or use **Create New** | **Pledge**. Alternatively, from a **Contact Summary** page, click on **Actions** | **Add Pledge**, or click on the **Pledges** tab and click on the **Add Pledge** button or link.

1. If the method of adding the pledge has not resulted in a read-only name beside **Select Contact**, then begin typing part of a name or e-mail in that field. Select a contact from the resulting list that is automatically populated.
2. If the contact making the pledge cannot be found from the contact search, click on **Create new contact** and choose one of the contact type options. This will open a popup form where you enter basic information about the contact and save the record.
3. Enter a value representing the sum of all of the payments to be made in the **Total Pledge Amount** field.
4. Enter the number of periods (pledge installments) and the length of each period (daily, weekly, monthly, or yearly) between payments, for example, **every 1 month**, **every 2 weeks**. After entering the total pledge amount and installment period, CiviCRM will calculate how much is due for each installment.
5. If desired, change **Payments are due on the** [] **day of the period** to a value other than **1**, for example, to **15** if monthly payments will be made mid-month.

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6. If the pledge was made before it is being recorded, backdate **Pledge Made** appropriately.
7. If the payments start on a day other than the date the pledge is being recorded, adjust the **Payments Start** date.
8. If the contact has an e-mail on file, click on **Send Acknowledgement** to e-mail them details of the pledge. If you choose to send an acknowledgement by mail, use the **Acknowledgement Date** field to record when that was sent. The date will be filled automatically if the e-mail option is used.
9. Click **- select -** beside **Self-service Payments Page** and click on an appropriate contribution page if one is available. If selected, a link to this contribution page will be included in the pledge reminder e-mails. The user can then use the page to submit an online payment and have the contribution attributed to the pledge. This is very valuable and important as it provides a direct way for the end user to associate a payment with a pledge.

As with contribution records, the donor may provide the pledge in honor or memory of someone. As with contribution records, any custom fields associated with pledges will appear in their own fieldset panel for completion at this time.

Click on the **Payment Reminders** header to expand the fieldset panel and configure reminder e-mails. Recall that this functionality is dependent on the configuration of a cron job that should run nightly and manages both the pledge status updates and e-mail reminders.

1. Configure when to send initial reminder: **Send Initial Reminder** [] **Days prior to each scheduled payment due date**.
2. If you wish to send multiple reminders, set the **Send up to** [] **reminders for each scheduled payment** to a value greater than one.
3. Set **Send additional reminders** [] **days after the last one sent** up to the maximum number of reminders.

Pledge reminders are only sent if it is possible to send to someone who has pledged a donation. If no e-mail is present for the contact, the e-mail becomes invalid, or if they have been marked either by administrators or themselves as **Do not e-mail**, then no reminders will be sent.

Once you've reviewed and completed the record, click on **Save** or **Save and New**. Click on **Cancel** to exit the record without saving.

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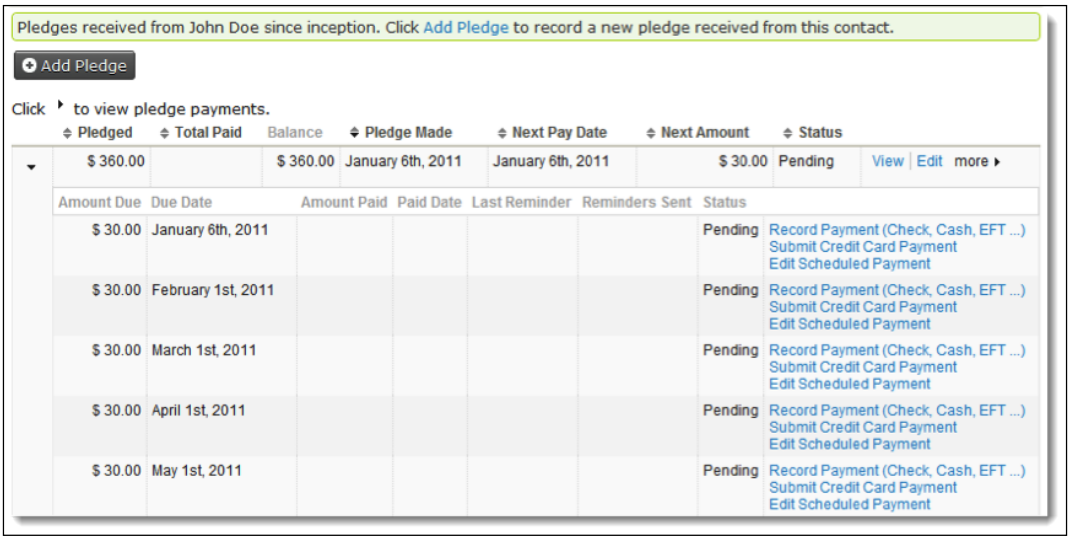
After saving, take a moment to review how CiviCRM constructs and displays the pledge record. As mentioned, the pledge itself is a container for individual pledge payments. This is reflected in the contact's **Pledges** tab by a single pledge row expanding to display the individual scheduled and completed pledge payments.


Pledges received from John Doe since inception. Click Add Pledge to record a new pledge received from this contact.
Add Pledge
Click to view pledge payments.
Pledged
Total Paid
Balance
Pledge Made
Next Pay Date
Next Amount
Status
$ 360.00
$ 360.00
January 6th, 2011
January 6th, 2011
$ 30.00
Pending
View | Edit more
Amount Due
Due Date
Amount Paid
Paid Date
Last Reminder
Reminders Sent
Status
$ 30.00 January 6th, 2011 Pending Record Payment (Check, Cash, EFT ...) Submit Credit Card Payment Edit Scheduled Payment
$ 30.00 February 1st, 2011 Pending Record Payment (Check, Cash, EFT ...) Submit Credit Card Payment Edit Scheduled Payment
$ 30.00 March 1st, 2011 Pending Record Payment (Check, Cash, EFT ...) Submit Credit Card Payment Edit Scheduled Payment
$ 30.00 April 1st, 2011 Pending Record Payment (Check, Cash, EFT ...) Submit Credit Card Payment Edit Scheduled Payment
$ 30.00 May 1st, 2011 Pending Record Payment (Check, Cash, EFT ...) Submit Credit Card Payment Edit Scheduled Payment

As you receive contributions associated with pledges, it is important to log them through this interface and not the primary contributions tab (CiviCRM places a reminder on the **Contributions** tab to provide guidance). Since the essence of tracking the pledge progress and status involves reviewing actual payments received for pledged payment records, you need to ensure that the contribution is associated with the pledge appropriately.

If the constituent is late providing payment, submits a payment that is different from what is scheduled, or requests altered terms for the payment (such as extending the payment period), use the **Edit Scheduled Payment** link to modify the record.

Searching, examining, and working with contributions

So far we have focused our energy on understanding the key configuration options related to fundraising and working with single contact and pledge records within the contact record. In this section, we will work with contribution records in bulk and review "recipes" for implementing fundraising techniques through CiviCRM. While working through this section, we will also highlight noteworthy features or places where you may see unexpected results if they are not handled correctly.

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Finding contributions

While you will often be working with contributions directly through the contact record, it is likely that much of your time will also be spent searching for and reporting on contribution records in bulk. For example, you will periodically need to know how many contributions were received over a period of time, such as the last month or year to date. You may need to export all contributions of the type "Donations" in order to send end-of-the-year statements for tax purposes. Alternatively, you may want to isolate donors who have given amounts over a certain threshold and classify them as Major Donors, targeting them in unique ways through postal mailings and e-mails.

As with other functionality areas in CiviCRM, you can conduct these searches using the component search at **Contributions** | **Find Contributions** or through the **Contributions** panel in **Advanced Search**. The field options are the same, but the results are quite different. Component searches will always return component records, whereas **Advanced Search** returns contact records by default. This means that if John Doe has three contributions matching my criteria, I will see three records in the CiviContribute component search (as distinct contribution records are returned) and only one in **Advanced Search** (representing the contact record). Further, actions, such as export and bulk update using profiles will reflect the source. In the **Find Contributions** tool, for example, you will be able to export contribution details.

In CiviCRM v3.3, the **Advanced Search** tool is extended to allow you to retrieve related records through this interface. Using the **Display Results As** drop-down, you can choose to retrieve contacts (default), activities, contributions, or event registration records. The benefit over using component searches is the ability to add criteria across multiple types of data, but retrieve the contact's related records in a different area. For example, I could retrieve all contributions for individuals with an **Employee of** relationship who have been members since 2004.

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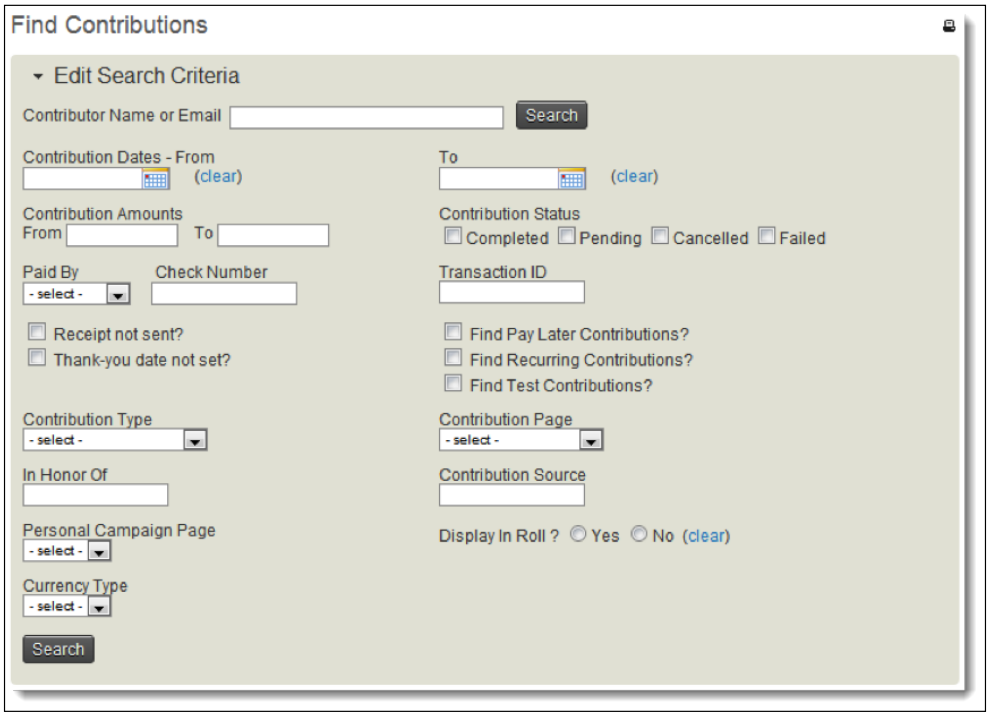
The following screenshot demonstrates the options available in the **Find Contributions** tool:



For the most part, these options are fairly intuitive and self-explanatory. We will review them briefly:

- **Contributor Name or Email**: It can be just a partial match.
- **Contribution Dates – From** and **To**: This will search the date on which the contribution was received (usually the date recorded).
- **Contribution Amounts From** and **To**: Criteria treated as equal to or greater than in the **From** field, and less than or equal to in the **To** Field.
- **Contribution Status**: Choose one or more of **Completed**, **Pending**, **Cancelled**, and **Failed**.
- **Paid By**, **Check Number** or **Transaction ID**: If you specify a value for **Check Number**, make sure that the **Paid By** field is either left empty, or has **Check selected**; otherwise no results will be returned.
- **Receipt Not Sent?**: This is convenient when generating a list of contributors to receive receipts.

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- **Thank-you date not set?**: If checked, contributions with **Thank-you date** set are not returned, providing results that need to be sent "thank-you's". If unchecked, results are returned regardless of the value in **Thank-you date**.
- **Find Pay Later Contributions?**: If checked, only "pay later" contributions are returned. If unchecked, results are returned regardless of the value in **Pay Later?**.
- **Find Recurring Contributions?**: If checked, only recurring contributions are returned. If unchecked, results are returned regardless of whether the contribution is a recurring one or not.
- **Find Test Contributions?**: If checked, any contributions generated through the contribution page test form will be returned. By default, all test records will be excluded from the search results. Selecting this option is the only way to locate those records.
- **Contribution Type**: Provides a convenient way to search for payments for events, memberships, donations, or other contributions types that have been configured.
- **Contribution Page**: Provides a convenient way to search for memberships in a particular organization (or subscription), or donations to appeals that used specialized contribution pages (campaigns).
- **In Honor Of**: Provides a way to search for honorees by name.

Unlike most free text searches for contacts in CiviCRM, the **In Honor of** search field does *not* find contacts based on their part or complete name, or e-mail address by default. To get around this constraint, you can explicitly include wildcards (%) in what you are searching for. Wherever you put one, it will match any text. For example, %John% will match John Doe as well as well as Jane Johnson.

- **Contribution Source**: Must be an exact match unless using wildcards.
- **Personal Campaign Page**. Can be used to determine how well a campaigner is doing.
- **Display In Roll**?: If **Yes** is selected, only contributions to personal campaign pages which had "Show my contribution" in the public honor roll checked are returned. If **No** is selected, only contributions to personal campaign pages which had **Show my contribution** in the public honor roll unchecked are returned. If neither **Yes** nor **No** is selected, then contributions are returned regardless of this setting, whether they were made through a personal campaign page or not.

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- **Currency Type**: If your CiviCRM implementation has more than one available currency (see **Administer | Configure | Global Settings | Localization**, **Available Currencies**), then users can select the currency in which they would like to contribute. Specifying a currency type here returns only contributions in that currency.
- **Custom data fields for Contributions**: You can filter search results on custom data fields.

Examining contributions

After conducting a search for contributions, you are given a list of results with key details. From this list, you can directly access the contact or contribution record.

Each column in the search results—name, amount, type, source, received, thank-you sent, status, and premium—can be sorted in ascending or descending order. You also have the familiar **View/Edit/Delete** action links on the right of each row.

Clicking on the contact name in any contribution row takes us to their summary record. We can see the number of contributions and pledges as well as other tabbed items. By clicking on the **Contributions** tab, we get a good capsule summary of their donation history that encompasses recency, frequency, and monetary amount in three lines. The first shows **Total Amount**, **# Contributions**, and **Average Amount for Current Year-to-Date**. The total for all the years is in the second one. Specific donations follow in reverse chronological order. Note that these totals only take into consideration completed contributions (pending, canceled, and so on are excluded). Once again, the columns can be sorted, facilitating quick access to donations in multiple ways.

Before rushing off, it's also worth pointing out that fundraisers can record the receipt of an offline payment or view, edit, or delete a contribution for this contact using links right on the page.

Taking action on contributions

After conducting a search for contributions, you can select some or all of the records and take action on them in bulk. The options available are different from what we saw in the contact search action list, as they are tailored to the needs of contribution records.

In this section, we will review those bulk actions, consider typical use cases for them, and walk-through how to make better use of the functionality available.

First conduct a search, select some or all records, and select the actions drop-down to review your options. After selecting an action to take on the selected records, click on **Go** to initiate it. The following subsections explain the various actions.

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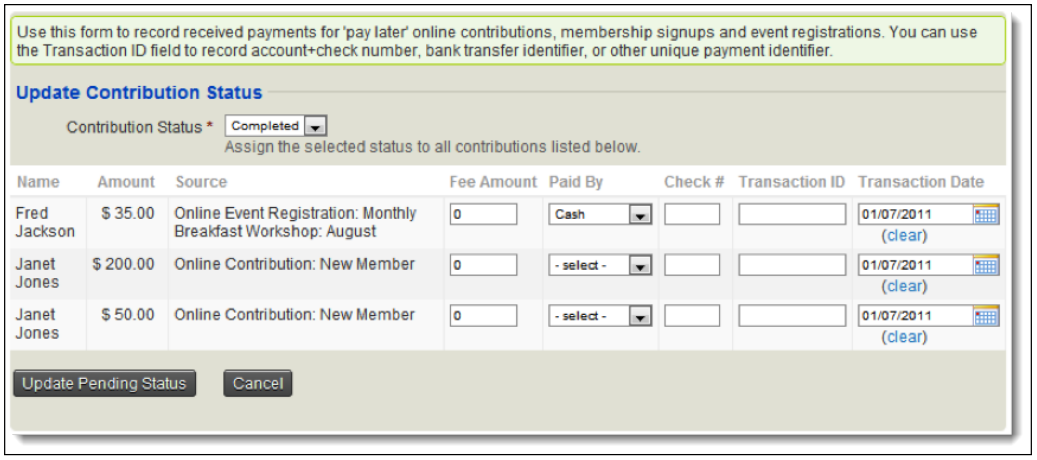
Update Pending Contribution Status

This tool is one way to update contributions from online "pay-later" contributions, or offline direct mail/telemarketing campaigns that have been received and entered manually by the administrative staff.

"Pay-later" contributions are left in a **Pending** status until the contribution is received (such as a check mailed in after the form was submitted). At a certain point, they may also be deemed to be failed donations if there is no longer any hope of collecting payment. The **Update Pending Contribution Status** action presents a batch update form optimized for dealing with this situation. It allows the **Fee Amount**, **Paid By**, **Check #**, **Transaction ID** and **Transaction Date** to be updated in a much quicker fashion than finding and editing these fields each individually. Once you have entered data for those fields and selected a new **Contribution Status** for the displayed records, click on **Update Pending Status** to save all the changes.

Note that all contributions selected by your search must have a status of pending in order to use this tool; else, an error message is displayed.


Use this form to record received payments for 'pay later' online contributions, membership signups and event registrations. You can use the Transaction ID field to record account+check number, bank transfer identifier, or other unique payment identifier.
Update Contribution Status
Contribution Status * Completed
Assign the selected status to all contributions listed below.
Name Amount Source Fee Amount Paid By Check # Transaction ID Transaction Date
Fred Jackson $ 35.00 Online Event Registration: Monthly Breakfast Workshop: August 0 Cash 01/07/2011 (clear)
Janet Jones $ 200.00 Online Contribution: New Member 0 - select - 01/07/2011 (clear)
Janet Jones $ 50.00 Online Contribution: New Member 0 - select - 01/07/2011 (clear)
Update Pending Status
Cancel

Print or E-mail Contribution Receipts

One excellent use of this action is to follow-up on records that have just had their contribution status updated from Pending to Completed. After clicking **Done** following any action you are returned to the search results and can proceed with additional actions. Select **Print or E-mail Contribution Receipts** from the list and click on **Go**.

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PDF or e-mail receipts

PDF receipts creates a PDF file of receipts that can be printed and mailed, while **E-mail Receipts** sends receipts to donors of all selected records via e-mail. After clicking to **Process Receipt(s)** you will be returned to the search results (if you e-mailed receipts) or be prompted to save the PDF file (if you are generating PDF receipts). Note that receipts are generated using the **Contribution - Receipt (on-line)** template (see **Administration | Configure | Message Templates, System Workflow Messages** for more details).

Sending e-mails to contacts

Working the same as the corresponding contact search action, this tool allows you to generate and send an e-mail activity to search results. One possible use of this action is to send thank-you e-mails to donors who will be receiving signed hard-copies of receipts where jurisdictions do not accept e-mail receipts for tax purposes.

Complete the standard **Send E-mail** activity form, selecting the **From** e-mail, **CC**, and **BCC** as appropriate; entering a **Subject** line; and providing the content of the e-mail. As with other uses of this tool you can choose to **Use Template**, and supply either/both **HTML Format** and **Plain-Text Format** content as desired. The e-mail content may be saved as a new template or if an existing template was used, it may be updated. If you've enabled attachments in your **Global Settings**, you may add them here.

Batch Update Contributions Via Profile

Also based on the contact search equivalent tool, this option allows you to update up to 100 records at once in a grid-style layout using a predefined profile to define the columns/fields that will be edited. For the purposes of illustrating the usefulness of this action, we will create a profile with contribution fields, and then use it to alter the status and several other contribution fields. Like batch update actions carried out on other records, you will be able to edit the fields exposed in the contribution profile in a much quicker fashion than finding and editing each contribution record individually.

Create a profile at **Administer | Custom | CiviCRM Profile** and select a few contribution-type fields, such as the thank-you date, payment instrument, and check number. It's not necessary to add contact-related fields as profiles with only contribution fields display the name, e-mail, and address of the donor automatically. After saving the profile, return to your search results or reinitiate them, select one or more contributions, and choose the **Batch Update Contributions Via Profile** action. You will be presented with a list of profiles that can be used for this purpose. Select the profile you just created and click **Continue**.

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You will be presented with a grid/spreadsheet type layout where you can edit fields for multiple records and save them in a single step. Note the icon next to the title of each column. Clicking on the icon will copy the value present in the first row to all subsequent rows. This is a great way to mass update records with the same value. For example, if you send out a batch of thank-you letters to all donors who contributed over the last month, you can conduct your search and use this tool to update the **Thank-You** field for all records at once.

Export Contributions

Some organizations track each donation in their accounting software (for example, Simply Accounting, AccPac, and Quickbooks), while others use CiviCRM to track this information and only transfer summary information to their accounting system (for example, total revenue for each donation type for each month). As CiviCRM's bookkeeping feature set grows stronger, more organizations will be able to shift to relying completely on CiviCRM for individual transaction tracking. Those still tracking all donors and donations in their accounting package will continue to need to export contributions from CiviCRM so they can be imported into the accounting system. This is a prime example of when the **Export Contributions** action is useful.

If you are an organization that does its books on a monthly basis, you might wait until the fifth or tenth of the month to migrate data from CiviCRM to your accounting package. At that point every month you would click on **Contributions | Find Contributions**, use criteria such as **All contributions** with a contribution status of **Completed** and a received date of the previous calendar month, and click on **Search**.

Next, select all of these contributions and choose **Export Contributions** from the action drop-down. At this point, you may export a pre-defined set of default fields (**Export PRIMARY fields**) or choose to select which fields you would like to export. When choosing which fields to export, you may save the field mapping and name it for easy retrieval on future exports.

Since the export process separates the records to be exported from the data columns actually included in the file, the field mapping can be reused for different export purposes. Depending on your work processes in CiviCRM, you may find it useful to construct a single export mapping that covers multiple export-related needs. Simplifying procedures so that only one data migration format is used is likely to reduce development and operating errors.

Delete Contributions

As the action title suggests, this is used for bulk deletion of contributions.

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However, we strongly discourage deleting financial data transactions and will suggest some ways to prevent any users from having permission to delete financial transactions. A better practice is to post reversing transactions or use the status to communicate why the original transaction has changed (for example, by marking as cancelled and providing an explanation for the action).

One exception may be when you clean out test records from your system. In general, test records are well-hidden from the interface. You must explicitly choose to include them from the **Find Contributions** tool (check **Find Test Contributions?**); otherwise, they will be excluded by default.

However, it is reasonable to want to periodically search for these test records and use the bulk **Delete Contributions** action to remove them from the system. Be sure you have a recent backup of your database before performing any bulk deletion of this sort.

As you can see, CiviCRM provides a number of powerful tools for working with contribution records in bulk. Take time to explore the features available so that you know your options when you are working with records and have a clear understanding of what they do.

Searching, examining, and taking action on pledges

When compared to contributions, fewer options related to pledge management are available. As described earlier, a pledge is a collection of contribution records (pledge payments) defined by the encompassing pledge options.

Searching pledges

To search for pledges, click on **Search** | **Find Pledges** or **Contributions** | **Pledges** | **Find Pledges**. The following criteria are available when searching pledges. We will note any particularly useful, interesting, or possibly unexpected behavior when using the criteria:

- **Pledger Name or Email**: Search using a partial string for the pledger name or e-mail.
- **Payment Scheduled – From** and **To**: Enter a range, or just a start or end date. Like other fields, not entering a value here will return records regardless of the value in this field.
- **Pledge Payment Status**: One or more of **Completed**, **Pending**, **Cancelled**, **Overdue**.

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- **Pledge Amounts – From** and **To**: These amount ranges are inclusive—it will include pledge amounts equal to or greater than **From** and equal to or lesser than the **To** amount. When using any of the range based fields, you do not need to provide a value for both. For example, entering **50** in the **Pledge Amount From** field will return all pledges greater than or equal to 50.
- **Pledge Status**: One or more **Completed**, **Pending**, **Cancelled**, **In Progress**, or **Overdue** statuses. Understand the difference between the **Pledge Payment Status**, which tracks individual payment records, and the **Pledge Status**, which tracks the overall status of the pledge record.
- **Pledge Made – From** and **To**: These are inclusive—pledge amounts equal to or greater than **From** and less than or equal to **To**.
- **Payments Start Date – From** and **To**: These are inclusive of pledge amounts equal to or greater than **From** and less than or equal to **To**.
- **Payments Ended Date – From** and **To**: These are inclusive of pledge amounts equal to or greater than **From** and less than or equal to **To**.
- **Contribution Type**: Enter one or more contribution types.
- **Contribution Page**: Note that this list may include contribution pages that are not currently configured to allow pledges. For example, there may have been a time when they allowed pledges and pledges were made against them.
- **In Honor Of**: Note that it searches all or part of first and last name, but does not search the e-mail address.
- **Find Test Pledges?** If selected, only test pledges are returned. If unselected, only non-test pledges are returned.
- **Pledge Frequency Every** [duration] [frequency]: Retrieves pledges defined by the selected frequency options.

The search results return the "container" pledge record, but you may click the arrow to the left of the record to expand and view the associated pledge payment schedule.

Examining pledges

Pledges are more complex than single contribution records. In essence, they are groups of contributions bound and managed as a single unit (with distinct elements). The creation of the pledge defines the contribution records; the status of the individual pledge payments controls the status of the overall pledge record.

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After conducting a search, the pledge search results page allows easy drill–down access into the schedule of payments, both pending and completed, that collectively make up the pledge record. In addition to **View/Edit/Delete** links, a **Cancel** action is available for pledges. Canceling, unlike deleting, doesn't remove the records of payments received. It is the preferred way of managing pledge records that have been stopped mid-payment.

Each payment revealed in the drill-down has action links on the right that allow a payment to be recorded by the administrator and also allow easy editing of the payment schedule when there is an issue with a payment. For example, if a payment has to be reduced or the due date extended, a single pledge payment record can be adjusted and the remaining payments will be adjusted accordingly.

Taking action on pledges

There are two actions available as operations on search pledge results: pledges can be exported or deleted. The interface and workflow are very similar to those for contributions described above and for other objects such as contacts, events, and memberships described elsewhere. After conducting your search, select some or all pledge records, choose an action, and click on **Go**.

Export Pledges

Select **Export PRIMARY fields** and click on **Continue** to save a `.csv` file containing primary contact and contribution fields to your local hard drive. The export can be used for importing into your accounting system, sending mails, or whatever other needs you have.

If you want more control over what fields are exported, choose **Select fields for export** and click on **Continue** to advance to the field selection page. From this page, you will be able to specify fields to be exported and, if desired, save the field mapping for future use. Once you have selected your fields, click on **Export** to generate and download the export file. Refer to your accounting system documentation for the fields it can make use of through its `.csv` import functionality.

If you have previously saved an Export field mapping, it will be available for selection and re-use when you choose the **Select fields for export** option. After selecting an existing field mapping and clicking on **Continue**, you will be able to review and modify the list of exported fields, and be provided the option to **Update this field mapping** or **Save as a new field mapping**. Selecting the former updates the field mapping when **Export** is clicked. Selecting the latter allows you to provide a **Name** and **Description**, and then saves the mapping as well as exports the data when **Export** is clicked. You can leave both unselected and just click **Export** to export the data without modifying the existing field mapping.

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Delete Pledges

As the action title suggests, initiating this option on pledge search results will remove them along with their associated contribution records from the system. This is a dangerous function, particularly when working with contribution records which have certain data integrity and retention obligations.

To reiterate, we strongly discourage deleting financial data transactions, and even suggest ways to prevent any users from having permission to delete financial transactions. If a payment (or pledge) has been made, it is better to cancel the record (retaining its history) or post reverse transactions (indicating that the funds were returned) than to delete it from your system. Deleting it altogether results in loss of historical data—the details and information about what transpired with the transaction. That is a poor business practice and may not adhere to generally accepted accounting principles.

The one exception to this rule is with test records that were generated solely for the purpose of testing functionality, and whose financial charges (if any) have been reversed. In the pledge search tool, select **Find Test Pledges** to retrieve them and use the **Delete Pledges** action to remove them.

Reporting

You can create contributions and pledges, manage existing records, conduct robust searches, and take bulk action on the results; but how do you translate the wealth of data in the system into a meaningful report for organization leadership? How do you turn raw data into a story that tells people where the organization is and where it is headed? In this section, we will translate some of the search tools described above into meaningful examples of how you might use them to extract important statistics and report summaries.

Counting prospects with Advanced Search

When trying to determine the number of prospects for different segments, you need to make sure to count contacts rather contributions. For example, if you want to find the number of people who have given a donation between $100 and $500, you would not use **Contributions | Find Contributions** or **Search | Find Contributions** because it may return duplicate contact records if the contact has given more than one donation within that range.

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Advanced Search returns contact records by default, not the related records (such as contributions) and includes a count of their number, so it is one useful way to count prospects for fundraising segments:

1. Click **Search** | **Advanced Search**.
2. Click the **Contributions** panel to open it. Note that this form is almost identical to the **Find Contributions** tool (it excludes the contact name/e-mail field, which is handled in the **Basic Criteria** panel).
3. Choose your desired criteria and run the search.

At this point, your search will return all contributors who have at least one contribution matching the criteria selected. One additional advantage of using the **Advanced Search** is the ability to add criteria *outside* of the contribution panel. For example, if you want to restrict your search to only those contacts who are also members in good standing, you can expand the **Membership** panel and add criteria.

The following table outlines how certain constituent segments would translate into specific search criteria:

Segment	Field	Enter the following value
Those who gave one or more contributions greater than or equal to $100 and less than or equal to $500	**Contribution Amounts From**	**100**
	Contribution Amounts To	**500**
Those who gave in 2009	**Contribution Dates – From**	**Jan 1, 2009**
	Contribution Dates – To	**Dec 31, 2009**
Recurring contributors	**Find Recurring Contributions?**	Checkmark
Tribute contributors	**In Honor Of**	% (the percent character is a wildcard that tells CiviCRM to match any non-empty value. In this case, we simply want all the contributors who have donated in honor of someone else)
Paid-event participants	**Contribution Type**	**Event Fee** (assuming your events use the standard **Event Fee** contribution type)

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Segment	Field	Enter the following value
Paid members or subscribers	**Contribution Type**	**Member Dues** (assuming your memberships use the standard **Member Dues** contribution type)
Contributor to a specific online campaign	**Contribution Page**	Select the page that accepted donations for the campaign.

After you have entered your criteria and clicked on **Search**, you are presented with a page that includes the total number of contributors that match the criteria, and the first page of results (by default the first 50). After you have reviewed the results, you can change your search criteria and rerun the search easily by clicking **Edit Search Criteria** to expand the criteria panel.

Note that if you enter more than one criterion, you will return fewer results because all the criteria must be true in order to be returned in the results; in other words, search criteria are restrictive (AND joins the criteria). You may use other tools, such as the **Search Builder** described below, if you are interested in returning results that match one *or* another criteria. Another way to achieve this is to run your individual sets of restrictive criteria and save them in a group, and then conduct a search that combines the groups (multiple groups selected in through **Advanced Search** are inclusive—the search will return records matching any of the groups).

Since criteria specified on the **Advanced Search** page are restrictive, we caution you against entering criteria for both contributions and pledges at the same time. If you aren't careful, you might end up asking for those who gave a completed donation and who also pledged, which are distinct groups generally handled very differently.

The **Advanced Search** is a very powerful tool, but it has several limitations. Most notably, the interface does not let you specify NOT criteria. For example, there is no way to say "Search for every contact that has contributed with a contribution type that is *not* **Event Fee**."

Additional segmentation suggestions and tools

CiviCRM's search and reporting mechanisms, potentially supplemented with custom searches and reports, can provide you with:

- The number of existing prospects for initial gifts (for example, the number who have subscribed to a newsletter, attended an event, e-mailed a concern, signed a petition, and so on).

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- Demographic and relational information on your donors and prospects and summary information on other characteristics you may have gathered as custom fields. This will be useful in developing categories of donors, for example, faculty, parents, alumni, local businesses.
- Analyses of the likelihood your contacts will participate in fundraising efforts based on their prior efforts to tell-a-friend, forward e-mails in your CMS, and use Personal Campaign Pages to involve others.

Your organization will need to review its own segmentation needs. For example, criteria for high-end segments appropriate for bequests, major one-time gifts, and planned giving will vary. Your efforts to define them may benefit from engaging in research on your contacts with strong donation histories. This research may be done through word-of-mouth inquiries by board members, online sleuthing, or various databases and public filings. The next sub-section also describes how to use CiviCRM to conduct surveys.

Before moving on to discuss other aspects of fundraising with CiviCRM, we want to point out a few custom search tools that are included with CiviCRM and may be very helpful when working with contributions.

The idea of custom searches came out of the need to provide advanced tools that performed calculation-based criteria or returned grouped and summarized data. While the component searches, advanced search, and search builder are very powerful and flexible, their "universal" nature requires them to return consistent types of records, namely, either contact records or related records (such as contributions). Custom searches provide developers with a framework for creating more specialized search tools.

Custom searches are found under **Search | Custom Searches...** Note that the submenu under the **Custom Searches…** item only includes a few of the more popular tools by default. Click on the actual **Custom Searches…** item to view a full list of available tools. The following are ones most useful for contribution related needs:

- **Contribution Aggregate**: Search by the total amount contributed over a period of time. For example, if you want to see how many people donated over $1000 in 2010, regardless of whether that was a single donation, four donations, or twenty, you can use this tool for that purpose.
- **Contributions made in Year X and not Year Y**: Useful for identifying lapsed or past donors who could be targeted for "renewal." Note that there are some reports that provide similar capabilities and are more robust in the criteria and options provided.
- **Find Contribution Amounts by Tag**: If tags are used to segment your contacts or track their source, this tool may be particularly useful.

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As with other search tools, you may conduct the search and take action on bulk results. The available options will depend on the nature of the records returned.

Researching with profile questionnaires

For many organizations, surveys and profile questionnaires provide an important basis for understanding existing and potential constituents, and may help form your strategies for fundraising.

CiviCRM's custom fields and profiles can be used to conduct surveys (see *Chapter 5, Collecting, Organizing, and Importing Data* for a full discussion of custom data and profiles). General results regarding market attitudes to your mission and case for donating are most important during the development of the fundraising plan. However, individual answers to survey questions during the development of the plan may provide data useful for targeting fundraising appeals. You may find that your contact base has distinct groups that respond to different elements of your mission. For example, some may be primarily interested in supporting immediate relief efforts, others primarily in supporting systemic and preventative change efforts.

CiviCRM v3.3 introduced a new Campaign component that uses activities as a structure for surveys and petitions. While the tools were originally developed for political and issue-oriented campaigns, they can also be used for mission and fundraising-based surveys. If you are using this version, investigate how those tools are structured to see if they provide an effective avenue for your needs.

Contribution reports

CiviCRM has built in reporting tools that include a number of excellent report templates geared toward donor/contribution/fundraising information needs. The following is a list of report templates currently available. You should expect this list to be supplemented in coming versions:

- **Donor Report (Summary)**
- **Donation Summary Report (Organization)**
- **Donation Summary Report (Household)**
- **Donor Report (Detail)**
- **Donation Summary Report (Repeat)**
- **SYBUNT Report**: This means "Donors who contributed Some Year But Not This Year"

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- **LYBUNT Report**: This means "Donors who contributed Last Year But Not This Year"
- **Soft Credit Report**: Soft credits represent donations that a contact has solicited but not made themselves
- **Top Donors Report**
- **Pledge Summary Report**
- **Pledged But not Paid Report**
- **Bookkeeping Report**

A full discussion of CiviCRM's reporting tools is found in *Chapter 12*, *Telling Your Story*: *Building Reports*. We won't take the time to walk through the concepts and available features here, as they are covered in depth in that later chapter. Take the time to review the core concepts and available reports so that you know where to turn when you need to begin assembling reports.

Implementing an appeal

As we have seen, fundraising plans generally include several different fundraising programs, such as converting one-time givers into pre-authorized monthly donors, holding a fundraising dinner, or prospecting for new donors. In this section, we will use CiviCRM to deliver an appeal across many channels: online, direct mail, telemarketing, and direct contact.

Planning

An appeal is a targeted message to constituents encouraging them to donate for a specific purpose – such as a project or new initiative. Standard elements of a simple fundraising appeal plan may include:

- **Segment**: Who is to be asked to donate?
- **Goal**: What total amount of giving is the appeal aiming to raise, and what will the funds be used for?
- **Case**: What reasons are to be provided to donate? This should be a refinement of the general case for giving in the overall fundraising plan. It is usually best if there is an emotional component and a sense of urgency in the communications.
- **Ask**: What is the specific thing to be asked for? (For example, a one-time gift larger than last year's, any gift, an increase in the monthly pledge, and so on.)
- **Face**: Who is the face of the campaign? What name will the letters and e-mails come from?

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- **Message**: What is the key message of the appeal, boiled down to a phrase or a sentence or two?
- **Creative**: The text, images, graphic design, and layout of the materials used in the appeal, including production. This includes e-mails, landing pages, thank-you pages and e-mails, direct mail packages and response mechanisms, telephone scripts, brochures, sign-up sheets, and so on. Don't forget the training and support materials for those helping to implement the appeal as volunteers or staff.
- **Team**: Who are the people who will be planning the appeal, preparing the materials, making the solicitations, following up, and so on?
- **Events**: Will there be a kick-off, closing, or other event(s)?
- **Schedule**: When do tasks and activities in the appeal start and end?
- **Closing**: When does soliciting for the appeal end and supporting materials like web pages and posters get taken down, and call sheets and off-line donations received by solicitors get collected for review?
- **Appreciation**: How will donors, volunteers, and staff be recognized and appreciated for their contributions? Will there be a party in addition to thank-you e-mails and letters?
- **Follow-up**: Reporting on how well the appeal achieved its goal, what lessons were learned for future efforts, sending pledge reminders, communicating with donors and others on how the funds were spent.

With this plan and creative materials in place, you can begin using CiviCRM tools to construct your online elements.

Creating an online contribution page

CiviCRM **Contribution Pages** are online forms used to collect contributions. They include a vast array of configuration options which you may choose from. To create a new page that donors can use to pledge or contribute online, click on **Administer** | **CiviContribute** | **New Contribution Page** or **Contributions** | **New Contribution Page**. You can view existing contribution pages by visiting **Administer** | **CiviContribute** | **Manage Contribution Pages** or **Contributions** | **Manage Contribution Pages**, and can click **Add Contribution Page** to create a new form from this page.

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This brings up a nine-step wizard that will walk you through setting up all of the options associated with a contribution page. Each step groups together settings of a particular type. You can see which step you are on by noting which of the nine text boxes representing the different stages is in bold (the title of the current page is sometimes a bit different from the short text used in the steps list). The wizard lets you move forward and back or cancel at any point using buttons conveniently located at the top and bottom of each page. Note that after advancing past the first page, your contribution page is saved in a partial-state of completion. Clicking cancel on later wizard steps returns you to the contribution page dialog and does not save settings from the current form you were on. However, the contribution page has already been created, and changes to other steps in the wizard will have been saved.

If you do navigate away before completing the wizard, you can complete the configuration of the page by editing its configuration as follows:

1. Click on **Administer | CiviContribute | Manage Contribution Pages** or **Contributions | Manage Contribution Pages**, and click **Configure** for the desired page. This brings up a page that lists the nine steps in the wizard with a description of what is configured on each one, as well as two other options that we will deal with below: **Test-drive** and **Live Contribution Page**.
2. From this page you can jump to any step that needs to be configured or re-configured:
    - **Title and Settings**
    - **Contribution Amounts**
    - **Membership Settings**
    - **Include Profiles**
    - **Thank-you and Receipting**
    - **Tell a Friend**
    - **Personal Campaign Pages**
    - **Contribution Widget**
    - **Premiums**

Each of these pages displays the same configurations as seen in the wizard. After entering or editing the values in the fields, you are presented with the option to **Save** or **Cancel**. Both return you to the page listing all of the configuration options for that contribution page.

Let's review each configuration step in turn.

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Title and settings

The **Title** of your contribution page should be related to the message of your appeal. If you are going to have a single page for donations on your site, you should make the title fit with the style your site uses for pages and menu items, such as **Donate** or **Help the Children!**

Select an appropriate **Contribution Type** for the page. If its name doesn't make it clear, you may want to verify that the type you are selecting has the right tax-deductible status and accounting code by opening a different browser tab. If you have a mouse with a right button and are using Firefox, you can click on **Administer | CiviContribute**, hover over **Contribution Types**, right-click then select **Open Link** in **New** tab.

If you want to allow organizations to make donations on the current page, click to select **Allow individuals to contribute and/or signup for membership on behalf of an organization?** This adds fields to the contribution page that allow the user to specify the name and contact information of the organization on whose behalf they are contributing. These fields appear when the user clicks a select box labeled with whatever text you put in **On behalf of Label**. Enabling this option will record the contribution record with the organization contact. If the contacts don't exist in the system, completion of the form will create a new organization and new individual contact, and construct an employer/employee of relationship between them.

If the page you are configuring is intended for a corporate campaign, you can check **'Required' to force ALL users to contribute/signup on behalf of an organization.** The contribution page functionality is used for membership signups as well as donations, and this feature is commonly used in that context when only organizations are eligible to purchase the memberships on a certain page.

Enter any creative material such as text and images that you want displayed at the top or bottom of the page in the **Introductory Message** and **Footer Message** fields.

If the appeal has a fundraising goal, you may fill it in and it will be used to calculate how close you are to meeting the goal. As we will see below, CiviCRM provides thermometer-style widgets that can be used to promote your goal-based campaign. These indications of progress are a time-tested way of motivating participation in offline and online campaigns.

These CiviContribute widgets are small blocks of content about the contribution page's appeal that can be placed elsewhere on the site or by your supporters on their sites. They explain the appeal and display the current progress towards meeting its goal. They also allow users of your supporters' sites displaying the widget to click through to the contribution page on your site to make a donation. We'll see what they look like, below. At this point, what's important is that the fundraising goal you set here determines the top level of the widget thermometers.

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One issue to be aware of when using widgets is that you may not have control over them if you have encouraged your supporters to integrate them on their own websites. Once the campaign associated with your appeal is over and the appeal is closed, widgets about the campaign may still exist on your supporters' sites. The **Start Date** and **Time**, and **End Date** and **Time** fields can be used to make the widgets point to a page displaying a "Campaign is over" message, which can help prevent unintended donations to a completed campaign.

Certain types of fundraising appeals benefit from having donors indicate that a donation is made in honor of someone else or in memoriam to someone. For example, an organization raising funds to fight breast cancer might encourage people to donate in honor of loved ones who are cancer survivors, or in memory of someone whose fight with the disease has ended. Donations received as a result of funeral notices directing donations in lieu of flowers to the organization can then be tracked, public listings of such donations displayed if desired, and families notified if appropriate to allow them to express their thanks.

If desired, click to select **Honoree Section Enabled**. You can optionally provide a title for the Honoree section of the page and a description to put above the honoree field. The latter might explain how such gifts are given special treatment.

By default, newly created contribution pages are active. This means that navigating to the right URL will display the page in whatever state of configuration it is. If you want to disable the page until it is fully configured, or if other elements in your fundraising program are ready, or its scheduled launch date has arrived, click to deselect **Is this Online Contribution Page Active?**.

Contribution amounts

This page contains settings associated with how payments are to be made as well as the pre-defined levels for donations.

As mentioned above, not all contribution pages need to submit a live transaction to online payment processors. Perhaps you want to set up a page that handles only in-kind contributions with custom profile fields appropriate to that use case, or perhaps you are just getting going with CiviCRM and though you haven't yet managed to get all of your merchant and payment processor approvals yet, you'd like to start accepting pledges for later payment by check. In these cases, you should uncheck **Execute real-time monetary transactions**.

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If you have configured more than one payment processor, checking **Execute real-time monetary transactions** brings up a **Payment Processor** select box. Your organization may have more than one payment processor account if your site accepts contributions on behalf of sub-organizations with their own accounts, or to provide complete separation of the accounting for charitable and non-charitable donations. Version 3.2 requires the same processor to be used for all contributions through a page, including immediate and recurring pledge payments (with the exception of membership signup forms, as discussed earlier). Select the appropriate payment processor from the drop-down select box.

In *Chapter 8*, *Growing Your Membership and Interacting with Members*, we will discuss the option of turning off the ability to donate when purchasing a membership or subscription. For standard contribution pages, ensure that **Contribution Amounts section enabled** is checked.

In some countries, it might be unclear why there should be an option to send in a payment later by check on an online donation form. Either people donate online, or they send in checks, or they phone in a contribution. Why would anyone want to do part of the transaction online and part offline? Why would an organization want to facilitate that? The reason is that some people can't or won't pay with a credit card or PayPal account online, perhaps because they don't have them (for example, wealthy old donors) or because they don't trust the security of online payment systems. They will respond to an e-mail appeal and fill in all of the information about themselves and their donation, but the payment itself will be done by mail, phone, or in person at a later date. They may also want to make the donation but not have sufficient available funds. Organizations benefit from reduced data entry and encouraging the commitment to donate, which allows them to follow up if the donation is not received within a reasonable period. There may also be cases where an organization's infrastructure doesn't support online payments—for example, on-going monthly payments with certain payment processors. In some countries like New Zealand and parts of Europe, electronic funds transfers are common and can be facilitated by providing banking details that are used when later paying from a bank site.

If you find one of these cases applies to you, enable the **Pay later option** and enter text to be displayed to users who want to pay later in the **Pay later** label. Then provide instructions such as an address, phone number, and payment grace period in **Pay later instructions**. This text is displayed on the thank-you page and is also included in the e-mail sent to the donor.

If you have configured a price set that you want to use, select it from the **Price Set** drop down. If you do not select a Price Set, then you can allow users to pledge to make donations by checking **Pledges**. Configure the pledge options displayed to donors as follows:

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1. Select one or more of the Supported pledge frequencies.

In many cases, you will optimize your return by only providing the option of monthly donations. As a rule of thumb, more fields to be filled in leads to more abandonment before completion. Unneeded options may detract from the user experience.

2. Checking **Allow frequency intervals** will present users with a field so they can enter a number for how often the selected pledge frequency will result in a donation. For example, they will be able to enter **3** if they want to donate every three months.

If you think your users really need this option, try testing two contribution pages, one with and one without this enabled, to see which yields better results.

3. Automated payment reminders for pledged payments can be set up using the **Send payment reminder**, **Send up to**, and **Send additional reminders** fields. For monthly pledges, good numbers might be either two days or none prior to the payment due date, three reminders in total, and 10 days between reminders. For annual payments, which are likely to be larger and more unexpected, 14 days' notice and three reminders 14 days apart might be appropriate. Procedures to ensure manual follow-up in cases of non-payment usually provide good return on investment.

Depending on what payment processor you are using, you may have the option of enabling recurring contributions. If enabled, you select the frequency options (units and intervals) available to users, similar to how pledges are constructed.

Pledges and recurring contributions provide similar, but different, functionality. It's important to understand the difference:

- A pledge is a promise to pay a total amount in fixed, scheduled intervals. It's only a promise though. The donor must send payment by phone/mail or using the online payment form when each scheduled pledge payment comes due.
- Recurring contributions are actual payment authorizations. Your payment processor will receive and record the recurring authorization. When the next payment comes due, they will automatically initiate the transaction and send notification back to your CiviCRM installation (so that the contribution record is generated).

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In general, recurring contributions are preferred, as you (and your donor) do not need to actually do anything to trigger the future payments. The contributor will receive receipts from both your CiviCRM installation and the payment processor which includes a link where they can visit and cancel the recurring contribution.

Though pledges require more work (to follow up with late payments) and are more susceptible to abandonment (since the donor must take action each time the pledge payment is due), it may still have an important place in your fundraising strategy, such as in multi-year capital campaigns.

Note that many payment processors don't support recurring contributions. If yours does not, the pledge tool may become a more important element of your fundraising plan.

Check **Allow other amounts** if you would like to give potential donors the option of entering a donation value of their choice, rather than being forced to select from the price set or simple list of donation levels. You may enter minimum and maximum amounts accepted for this field. One reason to enter a **Minimum amount** could be to help ensure you don't lose money given the cost of processing a donation. In our view, this is likely to be shortsighted given the lifetime value of a new donor and the cost of acquiring a new donor. In jurisdictions with limits on donations to political campaigns, entering a **Maximum amount** can improve compliance while lowering compliance-adherence costs.

Fixed Contribution Amounts are suggested gift levels presented to users as radio button options. You can provide an **Amount** for each level or both an amount and a **Contribution Label**. If desired, a default amount can be selected when users land on the page.

The number, amount, and default value of these options can significantly impact your revenue as they steer donors to giving less/more or abandoning their decision to donate. Consider using multiple pages that vary these amounts and the default value, and use it for comparison testing within the same segment. Consider setting up additional pages with appropriate suggested amounts when trying to upgrade donors to higher levels of giving. Vary the link inserted into direct mail and e-mail messages so that donors land on an appropriate page based on their segmentation.

Membership settings

Leave **Membership Section Enabled** unchecked for contribution pages. *Chapter 8, Growing Your Membership and Interacting with Members* will explain how to configure contribution pages for membership signup and renewal.

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Include Profile

Chapter 5, *Collecting*, *Organizing*, *and Importing Data* described how and why to create custom fields and gather default and custom fields together into profiles.

Contribution pages may optionally include two profiles that will collect more information about the donor/donation than is required by CiviCRM. Selecting a profile with **Include Profile (top of page)** causes the profile to appear above the billing information and below the introductory message, amounts, honoree section if enabled, and premium section if enabled. Selecting a profile with **Include Profile (bottom of page)** causes it to be displayed below the billing information. If fields on the form or in the profiles are repeated, only the first instance of the field is displayed.

A profile for contribution pages can contain fields about the contact giving the contribution or fields that are attached to the contribution. Commonly collected information about the contact will include name, address, phone, whether the contact wishes to subscribe to a newsletter, and other communication options. Asking what a donation should be used for is a good example of a custom contribution field for a profile.

Thank-you and Receipting

Expressing appreciation for a gift to your organization is not only polite and respectful, it also helps generate more gifts from that contact and possibly their associates. If you don't thank people for giving, you are much less likely to get repeat gifts, and word of mouth might cause others to not give.

The normal workflow for an online contribution begins with the contribution form, where the contact fills in information about the donation, a confirmation page which presents the user with everything that is about to happen for them to review and approve, and then a thank-you page.

The **Thank-you and Receipting** step in configuring a contribution page gives you control over the content of the thank-you page. The content entered here should reflect your appeal's general messaging. You must specify the **Thank-you Page Title**, which could be as simple as "Thank You!" You don't need to enter a **Thank-you message**, but it is a good idea to provide a sense of what the money will be used for in a personal tone of voice. The **Thank-you page footer** provides another text field on the same page that appears after optional items like "Tell-a-friend" and creating "Personal Campaign Pages", both of which are configured later on in the contribution page wizard as explained in the following section. If you are going to enable these viral marketing features, we highly recommend using the thank-you page footer to explain what they are and to motivate donors to make use of them.

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By default, **E-mail Receipt to Contributor?** is checked. Generally speaking you will always use this feature as an automated way to send receipt and an additional channel for thanking the donor. You may want to fill in the **Receipt From Name** with the organization name or individual most associated with contribution giving. It's best if the **Receipt From E-mail re**flects the **Receipt From Name.** Thank-yous coming from `info@mydomain.org` don't have a terribly strong impact. It is good practice to ensure that the FROM address is monitored since some people will reply to the e-mail. You may also want to include an e-mail address and phone number in the **Receipt Message** for an administrative person to contact if there are any questions. Details of the contribution are automatically inserted into the e-mail body. The template used to construct it can be reviewed by visiting **Administer | Configure | Message Templates**.

Use the **CC Receipt To** and **BCC Receipt To** fields to enter one or more comma separated e-mail addresses to receive copies of the receipt messages. This can be useful if there are premiums or price set options that require manual fulfillment, such as setting up a membership or subscription, or sending out thank you gifts.

Tell a Friend

A person who has just finished donating to your cause is the best advocate you can have for encouraging their friends and colleagues to donate. They can speak with authority about making a donation, and they are often highly motivated as they have just made their own donation.

To encourage viral marketing of your cause, CiviCRM includes functionality to enable donors to tell their friends to donate via e-mail. Check **Tell a Friend enabled?** to reveal available options.

The first two fields, **Title** and **Introduction**, control what appears if users go from the donation thank-you page to the **Tell a Friend** form. **Suggested Message** is text that these users can modify, so that the text they want will be sent to their friends or colleagues. An **Info Page Link** can also be included in messages sent to these friends. This provides a longer case for giving to the campaign and more information about your organization and its mission. The **Thank-you Title** and **Thank-you Message** are the title and text that will be displayed to people who do tell their friends.

Personal Campaign Pages

A stronger kind of viral networking than **Tell a Friend** is appropriate in cases where the donor is making or would be willing to make more of a commitment and sacrifice to the appeal and organization than just a few clicks and a few dollars. If your supporter base includes highly motivated and engaged individuals, such as people willing to participate in a run-a-thon or bike-a-thon, then you might want to enable and put some effort into personal campaign pages for these volunteer campaigners.

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Check **Enable Personal Campaign Pages (for this contribution page)?**. This reveals a number of settings to configure. The first two help to protect the reputation of your organization from Spam bots and malicious users. Check **Approval required?** to require administrator approval before new personal campaign pages are activated. Enter a **Notify** e-mail to ensure that the administrator is notified as soon as there are pages awaiting approval on the site. Once the page is approved, its creator will be notified and they will be able to start their campaign.

You and the system need to know who is setting up a campaign page. Use a profile to collect key information about the constituent, such as their name and contact details. "Once this profile is specified in **Supporter profile**, it will be used as supporters create their campaign page. We recommend allowing approved supporters to use **Tell a friend** functionality by checking that field, and setting the "**Tell a friend**" **Maximum recipients limit** to **5** or **10**. The latter setting allows personal campaigners sufficient flexibility while not risking unduly loading the system or endangering it in being labeled a spammer.

Your appeal message should be consulted to help you determine what to enter in **Create Personal Campaign Page** link text. This text will appear on the donor thank-you page and on each Personal Campaign Page to encourage donors and visitors to personal campaign pages to create their own. It is good communication policy to use the same text on any menu or other links to the same functionality. For example, if you have an article on your website about a fundraising campaign, use the same text for a link in the article to the donation page as you use for it in your site's menu system.

When people create a personal campaign page, they have the option of allowing donors to their page to leave information that will be scrolled through on an honor roll on their personal campaign page.

While Personal Campaign Pages can be powerful ways to transmit the message about your site's contribution page, they are potentially dangerous as strangers are allowed to create content on your site and send e-mail messages from your site with links back to that content. We saw that it was possible to require prior administrator approval of Personal Campaign Pages before they were allowed to become active. Administrators can also click on **Contributions** | **Personal Campaign Pages** or **Administer** | **CiviContribute** | **Personal Campaign Pages** to get to an interface to manage these pages.

To review the content of a Personal Campaign Page and confirm it is (still) appropriate, click on its **Page Title**. If the page content is inappropriate, go back to Personal Campaign Pages and click on either **Reject** or **Delete**.

Campaigners who get others to donate are extremely valuable to your organization. CiviCRM automatically gives a soft credit to the creator of a Personal Campaign Page for all the money raised through it.

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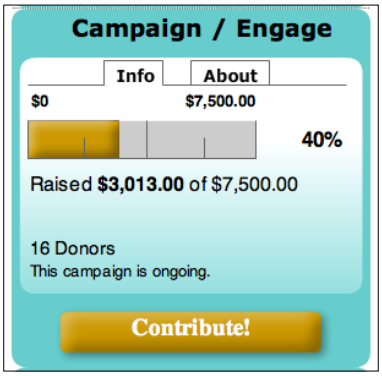
Contribution widget

As described in the preceding sections, contribution widgets are code snippets that can easily be added to any web page to help motivate and drive potential donors to the contribution page. Contribution widgets are a different form of viral marketing than Personal Campaign Pages or Tell a Friend. Instead of having supporters reach out one-on-one to their friends via e-mail, it enables supporters with their own sites or web pages to easily publicize the donation page to their own site visitors. Contribution widgets can also be used on your own site. They can be placed in Drupal blocks or Joomla! modules to draw attention to ongoing fundraising campaigns you are conducting.

To enable contribution widgets for a contribution page, check **Enable Widget?** This reveals settings that can be configured to affect the appearance of the widget. The following screenshot shows the two tabs of a sample widget:



The **Info** tab displays the graphical thermometer as well as text indicating the target amount, total raised so far, and the current number of donations.

Campaign / Engage
Info
About
Module for field and phone-based canvassing along with "Get out the Vote" campaigns. Read and comment on the wiki
Contribute!

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The **About** tab displays a short bit of text. Note that the space available for content is limited as this is a widget and not a full page. You should use a short, boiled-down version of the campaign's ask or appeal, rather than a neutral reporting description of what the campaign is about.

You must enter **Title** text and **About** text in the appropriate fields. You may also specify a logo image by providing **URL to logo image**. You can enter **Contribute!** or alternative appropriate text for the **Button Title**. You must enter your **URL to home page**. You can optionally adjust the colors of each visual element of the widget by clicking to open the **Widget Colors** panel. Hexadecimal color codes can be found at `http://en.wikipedia.org/wiki/Web_colors#Color_table`.

Once you have entered this information, click **Save and Preview**. Once you are satisfied with the appearance of your widget, click **Select Code**, paste it into any web page desired, and make it available through your CMS to visitors to copy to their own sites (if desired). If you have a list of webmasters who are interested in your organization's mission, that would be a good place to post a request to use the code.

Premiums

Premiums are a way of encouraging donors to donate more than they would otherwise. It incentivizes giving by offering a gift at various donation levels.

Premiums must be configured before they can be used on a particular contribution page. Review the Configure Premiums section found earlier in this chapter. To enable the premium section for a contribution page, click on **Premium Section Enabled?**

As with all other text and content for contribution pages, the **Title** and **Introductory Message** for the **Premium** section should be developed in order to support the case for giving and overall message of the appeal. The title appears as a section heading on the contribution page, and the Introductory message, which can contain images and other html graphical elements, appears below it but above the list of premiums available to donors on the page.

We recommend providing an office administrator **Contact e-mail** and **Contact phone** number for any donor with questions about premium fulfillment and shipping.

You can disable the automatic display of the minimum contribution amount after the description of each premium by unchecking **Display Minimum Contribution Amount?**

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Test-drive

After completing configuration of your contribution page, we strongly recommend you test the new contribution page using the Test-drive functionality. Try to test all options, which may require going through the confirmation, thank-you, and other optionally enabled pages a few times. Review e-mails that are generated as well as on-screen content. Once you have done this yourself, you should get another staff person or friend to review it before you enable the page.

Live Contribution Page

Once you are satisfied with the configuration of your new contribution page using test drive mode, we strongly recommend testing the live contribution page. This is an essential step if this is the first page configured to use a new or changed payment processor, or for pages using new optional features.

If you have an organizational credit card or PayPal account, the service charges on the amounts on your pages shouldn't be that problematic. You can try configuring a test contribution of $1 or $10 or some other small amount in order to reduce any costs incurred by your processor. Don't forget to disable or delete the option for the small test amount before putting the page into your menu system or advertising it through an e-mail blast.

Many times, we want to send out a broadcast appeal to a large group immediately after enabling a new contribution page. To avoid embarrassment and more importantly, loss of revenue and respect from your donor base, make sure you send the message first to a small group who will review and test all elements of your campaign, including automated e-mails.

Publicize the page

The URL generated by CiviCRM for a contribution page is pretty ugly and hard to remember. It may look something like `https://mydomain.org/civicrm/contribute/transact?reset=1&id=1`.

Both Drupal and Joomla! provide tools for creating search-engine-friendly links that will disguise the standard CiviCRM link, turning it into something like `https://mydomain.org/donateNow`.

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In Drupal, you can enable the core Path module, then navigate in Drupal to **Site building | URL aliases | Add alias**. In Joomla!, you can enable the native SEF rewriting tool through **Site | Global Configuration**, and select the **Site** tab. In the **SEO** fields on the right select **Yes** beside **Search Engine Friendly URLs**, and preferably enable the `htaccess` option (being sure to change the filename that ships with Joomla! as per the instructions provided). Then create a link using **Menu Manager** and in the **Menu Items Details** group enter a friendly URL in the **Alias** field. Note that enabling SEF URLs will have broader impact on your entire site. While it is a significant and highly recommended improvement over non-SEF URLs, you should make sure you test thoroughly before enabling in a live environment.

To avoid getting split statistics by search engines due to having two links to the same page, it is also a good idea to set up and configure the **Global Redirect** module in Drupal so that there is only ever a single URL for a page.

Sending direct mail

CiviCRM functionality supporting offline contribution management is mostly covered elsewhere in this book, and there is little to add that is specific to fundraising. As a result, the next few sections will present short summaries describing how to use that functionality in a coherent approach to address fundraising objectives, rather than the detailed instructions necessary to walk through administering and using various forms and pages in CiviCRM.

A direct mail appeal involves preparing mail packages, handling the returns of undeliverable mail, and inputting responses. The simplest mail packages have address labels on the outside of the envelope and unaddressed "Dear Supporter" letters inside. A different approach is to use envelopes with windows revealing the addressee and address at the top of the first page of the letter. Even the smallest non-profits can produce these packages in-house using CiviCRM's support for labels and personalized letters.

Once volumes are no longer small, it may be more cost effective to out-source the production of the packages. At a certain point, different techniques which are only cost effective with larger scale volumes become appropriate. In particular, printing addresses and personalized salutations onto a single sheet which is cut, folded, stuffed with inserts or response mechanisms on different paper stock, and sealed to produce the envelope and its contents, can all be accomplished more efficiently using large scale services.

When volumes are small, you might print labels and letters directly from CiviCRM. As the volumes increase, CiviCRM contact information will be exported into a file that is delivered to the mail-house for processing.

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Post offices provide volume and other discounts that significantly affect the return on direct mail fundraising programs. If an organization can prove that the proportion of undeliverable addresses in a mailing is low enough, they may receive a reduced rate. If they can ensure that the mail is bundled into groupings that correspond to delivery routes, they may also receive a reduction. At present, CiviCRM supports the US Postal Service's address verification software. Apart from that, files exported from CiviCRM need to be processed by external services in order for CiviCRM users to qualify for postal delivery discounts.

Some postal services and private services have change of address files that can be used to update the addresses in direct mail databases. Though mail is deliverable to properly formatted but out of date addresses, this is a poor use of valuable resources, and communication with valuable donors is lost. It pays to periodically cleanse a donor file against a National Change of Address or similar file.

The cost effective way to deal with undelivered returns and to process significant volumes of positive responses is to put barcodes on the envelopes and response devices. This allows a barcode reader to quickly input the information without retyping or conducting manual, time-consuming lookups. There is an initial specification for adding barcode support to CiviCRM, but it is awaiting community funding (`http://wiki.civicrm.org/confluence/display/CRM/CiviCRM+for+Canvassing+and+GOTV`). In the meantime, printing the contact ID as part of the envelope addresses and response materials reduces data entry costs.

Running a telemarketing appeal

At its simplest, an outbound telemarketing appeal requires campaigners to speak with prospects on the phone, record whether they will donate, discuss how much they will donate, and record how they will pay including details such as their credit card information.

To make this happen, you will begin by getting a list of qualified prospects with phone numbers. This may involve appending phone numbers through a data broker. The quality of the phone canvassers' training and abilities makes a big difference to the response rate and level of donations received. Low-end call centre technology can improve the productiveness of human callers by using predictive dialing. Employing **Voice over IP** (**VoIP**) phones can reduce long-distance costs without significant loss of call quality. Internet based solutions start with inbound click to call solutions, which are now closely related to virtual call centre technology. In this setup, Internet-based phone canvassers are connected to qualified prospects by a website or web service, and they enter the responses they receive into website forms without having to see or dial a phone number.

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The link cited previously includes some rough estimates of the cost to implement much of this in CiviCRM. Simpler approaches are readily available.

The simplest of all is to search for prospects that have appropriate phone numbers. Print-outs can form the basis of a call sheet, with response data entered at a later point.

Lists of prospects without phone numbers or whose numbers are now NIS (not-in-service) can be exported and sent to a data broker and the results imported to overwrite existing stale data.

Moving up a notch in sophistication, custom fields can be set up for activities to represent typical activities in a phone canvass, such as responses to questions in a script (for example, are you willing to make a donation of $50?), and call disposition (no answer, not home, and so on). This can be used to filter prospects that have not yet been reached and to target those whose pledged donations have not yet been received.

CiviEngage is a new Drupal module that aims to address a large number of grassroots organizing activities through customizations of CiviCRM features like custom fields, groups, and activities. It aims to implement a particular organizing model that has had success in a number of contexts. A bit of its functionality is oriented towards supporting call lists along the lines just mentioned. If you are uncomfortable setting up custom fields and specifying search criteria and want to use CiviCRM in telemarketing, then it will be a very good starting point. You will still need to modify the fields and the generic responses CiviEngage creates in order for it to be useful. However, it is usually easier to modify something that does much of what is desired than to start from scratch. The installation procedures for CiviEngage are available at `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviEngage+Installation`. Note that CiviEngage and CiviCampaign may merge at some point.

Direct contact

Direct contact fundraising involves activities like soliciting donations from passers-by on busy streets. It can also encompass staffing a kiosk at a conference or mall. Choosing locations where the street traffic is likely to be well disposed to your cause and able and willing to donate is important. Canvasser personality and skills are critical.

Donors from this channel can be entered into CiviCRM from cards or sheets used on clipboards. They tend not to renew as frequently as donors from other channels.

Another traditional approach enjoying some success is door-to-door canvassing. Once again, the neighborhood targeted will have an immense impact on whether this form of prospecting breaks even and pays dividends over the long term.

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If your organization's qualified prospect list is dense enough in some neighborhoods, then it can make sense to use walk lists for canvassers. CiviEngage provides some support in this area. It relies on core CiviCRM address parsing to pull out street numbers from civic addresses in order to produce a walk list report. Once apartment and suite numbers are reliably parsed, then it will be more effective at serving urban needs.

Other types of donations

Major one-time donations and planned gifts tend to come from contacts that have a good long-term relationship with your organization or key individuals in it, a strong alignment with your mission or some part of it, trust that your organization will successfully deliver on commitments, and resources that enable them to make a major gift. Custom fields in CiviCRM can be used to track specific interests and demographic information related to ability to give. During the cultivation of the relationship, personal face-to-face relationships developed through CiviEvent and board activities can be important. Tracking of relationships among high net worth individuals, or cross-linked board memberships of other organizations can be important in identifying prospects for major donor campaigns and the best person to contact for the request. Once the ask has been made it can be useful to track meetings and phone calls regarding the negotiations about the terms of the gift, tax implications, and so on. These can be stored in generic Activities, or a more structured workflow can be created using CiviCase.

Permissions

While the broader issue of permissions is covered elsewhere, we want to take a moment to re-emphasize an important concern when working with contributions. We strongly discourage deleting financial data transactions as these records have tax and financial auditing implications. Drupal installations can disable the "delete in CiviContribute" and "delete in CiviPledge" permission from all roles to prevent intentional or unintentional deletions.

Joomla 1.6 will have access control capabilities and work is already being done to integrate those tools with CiviCRM's permissioning. If access control is a critical requirement for your organization and you are using Joomla!, begin by looking into what it will take to upgrade your site to Joomla! 1.6 and implement CiviCRM.

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Summary

In this chapter, we learned how to use CiviCRM for fundraising. In particular, we discussed:

- The basics of developing a fundraising plan
- Factors to consider when selecting an online payment processor
- How to configure CiviContribute and CiviPledge
- Manually recording donations and pledges
- Finding, examining, and acting on contributions and pledges
- Implementing a fundraising appeal

In the next chapter, we will discuss how your organization can track memberships and subscriptions using CiviCRM, and how to use contribution pages to enable your constituents to purchase and renew them online.

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8
Growing Your Membership and Interacting with Members

If you are a member-based organization, whether a professional or trade association, a society, or a charitable not-for-profit using membership structures to encourage recurring support, your members are your lifeblood. They are your primary constituents and much of your organizational identity and vision is likely to revolve around serving their needs. Having an integrated system to solicit, retain, and manage your members is essential to your organization's success. As such, you will want to take advantage of CiviCRM's membership management tools.

In this chapter, we will:

- Review the initial setup and configuration of membership structures in CiviCRM
- Understand how the daily management tools work
- Solicit new members and retain existing members with online forms
- Search and build reports to track members
- Put membership in context and review other tools that will prove useful

Setting things up

As with other areas of CiviCRM, you will begin by configuring several system options related to membership. It is important to take some time to think through the mechanics of how your organization works in order to ensure that the system is configured properly.

There are two membership tools that must be configured through the interface and a cron job that you may want to set up, depending on how you are using the tools. Access these options through **Administer** | **CiviMember**.

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Defining membership types

Membership types equate to the different categories of membership your organization maintains. Each type will have an amount and dues period associated with it. So, if your membership structure has sublevels or you allow alternate payment periods, you may need to define a type for each sublevel or payment arrangement.

For example, consider an "Affiliate Membership" category that is broken down into three sublevels—small, medium, and large, in which the volume of annual sales generated by the member company determines its membership sublevel. To achieve this, you would create three membership types—Affiliate (small), Affiliate (medium), Affiliate (large), or some similar naming convention.

After naming the type and entering an optional description, you search and identify the organization to which the membership is attached. This means that at the very least, your database must contain one organization record representing *your* organization, to which these membership types will be attached.

This membership-defining structure, as attached to an organization record, helps support more complex systems where you may have memberships with both the state organization and regional districts, or some other sub-entity. Memberships are also a good way to implement paid subscriptions (such as a monthly magazine). Organizations that have both memberships and paid subscription products can attach the membership types to different organizational entities (such as departments) for management and reporting purposes.

Proceed with the form; enter in the membership amount and contribution type to which the payments should be assigned. If your membership type is free, simply enter **0** in the amount field.

Next, you determine the membership period. The period is the length of the membership from starting point to ending point. CiviCRM supports two models—fixed and rolling periods. Rolling membership types begin on the signup date and extend for the configured length of the membership. Fixed periods, as the name suggests, have a fixed starting point, for example, January 1.

Fixed memberships with duration in months always start on the beginning of the calendar month a person signs up. For example, if a person signs up for a fixed period membership of six months on July 7, their membership begins on July 1 and ends on December 31. If you have selected a fixed period of one or more years, you must select the start date for the period and the rollover date. The rollover date is the point after which a new membership record will cover both the current and coming year. Consider the following example.

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FPAGM configures three membership types in the system **Regular** and **Affiliate** each have a fixed membership period for one year starting on January 1, while **Supporting** members have a one-year rolling membership. For the two fixed period membership types, they set a rollover date of November 1. This means that any new memberships created between November 1 and December 31 will be valid from the time created until December *of the following year*. This feature recognizes that it would not be appropriate to assess a full year's membership dues for only two months of benefit.

One of the most powerful features of CiviCRM's membership tools is the ability to configure membership inheritance through relationships. If a relationship is selected in the membership type configuration, any contact record with that relationship to the "primary" member is automatically granted a membership.

A common use of this feature is to automatically consider employees of organizations as members. To do this, select **Employer of** in the relationship type field. When an organization becomes a member, a corresponding membership record will be generated for each employee of the organization. The related or inherited records will not be editable; only the primary owner of the membership will have an editable record.

Identifying which side of the relationship you should select can be tricky. For instance, in the preceding example, should you select **Employer of** or **Employee of** as the relationship type? For help selecting the right relationship type and to see some examples of how the inheritance works, click on the help icon by this field.

Other relationships that are commonly used for membership inheritance are **Household Member is**, **Parent of**, and **Spouse of**.

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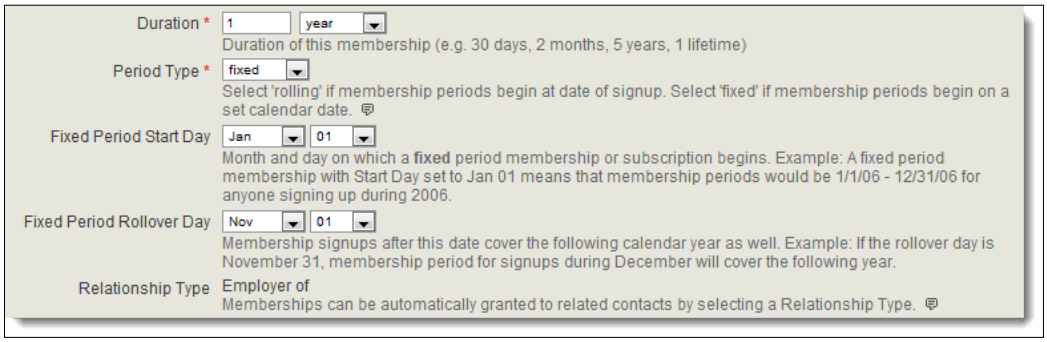
FPAGM's Regular and Affiliate membership types are both organization-based (the membership is owned by organizations, such as food pantries and businesses supplying to the pantries). The Association will configure both to have **Employer of** inheritance. By doing this, the organization can develop saved searches for current members for use in mailing and broadcast e-mails.


Duration * 1 year
Duration of this membership (e.g. 30 days, 2 months, 5 years, 1 lifetime)
Period Type * fixed
Select 'rolling' if membership periods begin at date of signup. Select 'fixed' if membership periods begin on a set calendar date.
Fixed Period Start Day Jan 01
Month and day on which a fixed period membership or subscription begins. Example: A fixed period membership with Start Day set to Jan 01 means that membership periods would be 1/1/06 - 12/31/06 for anyone signing up during 2006.
Fixed Period Rollover Day Nov 01
Membership signups after this date cover the following calendar year as well. Example: If the rollover day is November 31, membership period for signups during December will cover the following year.
Relationship Type Employer of
Memberships can be automatically granted to related contacts by selecting a Relationship Type.

Reviewing status rules

At any given point in time, you will view your members as having a certain status. For example, when they first join, you may view them as new members. If the current date falls within their membership period, they are current members. At some point, if they choose not to renew, they will be considered expired or past members.

CiviCRM provides a mechanism for defining the rules by which you determine the status of members and which can be configured to periodically calculate the status of members based on those rules. Navigate to **Administer** | **CiviMember** | **Membership Status Rules** to review and modify them.

Before we look at the rules themselves, let's understand a few important concepts and review the intended purpose of the default rules.

The first concept to grasp is the importance of the status rule order. As CiviCRM processes membership records against these rules, it will assign the first matching rule based on the order displayed. This is important, as some membership records may match multiple rules.

For example, in most status configurations a **New** member would also match the **Current** member rule. Since the **New** status rule is listed first (in the default configuration), this is the status that will be assigned.

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CiviCRM ships with seven pre-configured rules. Let's briefly review their intended use:

- **New members**: These are members who have just joined the organization. Perhaps you want to recognize them by sending them special communications or recognize their "newness" with a flag on their conference nametag. Whatever your use, this status will help you quickly identify new members.
- **Current members**: These are members for whom the current date falls within their membership period start and end dates.
- **Grace**: This status provides a way to give members some flexibility if they have not renewed their memberships prior to their end date. Let's be honest—most members wait until after their end date to renew their membership. You don't necessarily want to cut them off right away; so you configure a grace period in which their member benefits continue, but they are not considered a **Current** member. This can also be helpful for your membership director or membership committee. You can use the **Grace** status to quickly generate a list of members who have not yet renewed for the current year, and start reaching out to encourage renewal.
- **Expired**: Once a member is past the end date and past the grace period allowance, their membership expires. The **Expired** status tells you that they let their membership lapse without renewing.
- **Pending**: The **Pending** status is a special use case when allowing membership signups with the "pay later" option. The "pay later" option can be enabled for member signup pages as an alternative to collecting real-time credit card payments. In effect, it is a promise to pay by check, cash, or whatever other options you provide to members. When a membership record is generated through pay later, both the membership and contribution record is flagged as **Pending**. Once the payment is received, you will record it in the contribution record and mark it as **Complete**. After saving the completed contribution record, its corresponding pending membership will be updated to the **New** or **Current** status.
- **Cancelled**: The first four status types are all date-based rules. Depending on the current date and configured rules, the membership record will be assigned the first matching status. The fifth one (**Pending**) is a payment-based rule. In contrast, the **Cancelled** status is generally only handled on a manual basis. For example, a person may join your advocacy organization and at a later point find that they disagree with certain positions taken by the organization, prompting them to contact you and cancel their membership. There is no date or payment-based calculation triggering the cancelation; you simply change their status to **Cancelled** in the membership record.

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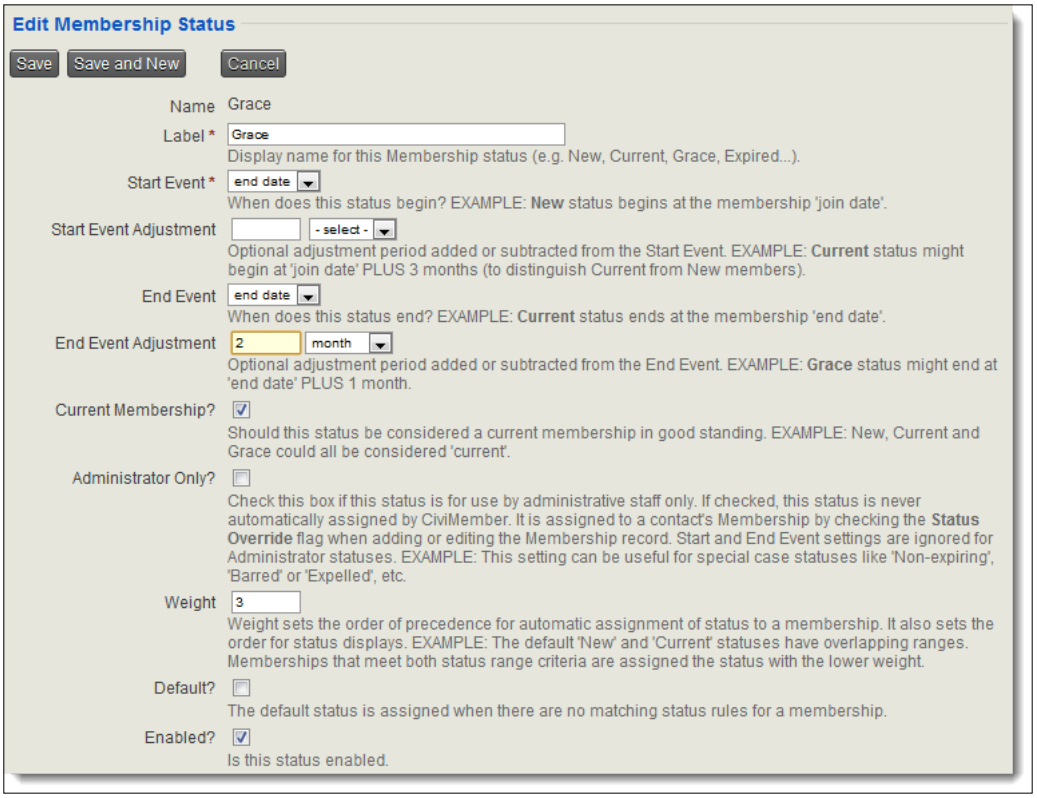
- **Deceased**: The last default status type, **Deceased**, may be manually applied to the record or will be triggered by the contact's "deceased" field.

Most organizations will find the basic functionality afforded by these default rules to be sufficient for their needs (though they will certainly want to review them and may find a need to tweak the rules configuration, such as adjusting the duration of their grace period). If the default rules do not meet your needs, you may add, edit, remove, or reorder the rules as needed. For example, you may construct a multi-tiered grace period structure before members expire—grace (one month), limited (two months), last chance (three months), in which you gradually restrict the user from certain member benefits and communicate with them in different ways.

While creating a new rule or editing an existing one, you have several configuration options available. These options can be easily misunderstood or misconfigured, so let's take a moment to review them:


Edit Membership Status
Save
Save and New
Cancel
Name
Grace
Label *
Grace
Display name for this Membership status (e.g. New, Current, Grace, Expired...).
Start Event *
end date
When does this status begin? EXAMPLE: New status begins at the membership 'join date'.
Start Event Adjustment
- select -
Optional adjustment period added or subtracted from the Start Event. EXAMPLE: Current status might begin at 'join date' PLUS 3 months (to distinguish Current from New members).
End Event
end date
When does this status end? EXAMPLE: Current status ends at the membership 'end date'.
End Event Adjustment
2
month
Optional adjustment period added or subtracted from the End Event. EXAMPLE: Grace status might end at 'end date' PLUS 1 month.
Current Membership?
Should this status be considered a current membership in good standing. EXAMPLE: New, Current and Grace could all be considered 'current'.
Administrator Only?
Check this box if this status is for use by administrative staff only. If checked, this status is never automatically assigned by CiviMember. It is assigned to a contact's Membership by checking the Status Override flag when adding or editing the Membership record. Start and End Event settings are ignored for Administrator statuses. EXAMPLE: This setting can be useful for special case statuses like 'Non-expiring', 'Barred' or 'Expelled', etc.
Weight
3
Weight sets the order of precedence for automatic assignment of status to a membership. It also sets the order for status displays. EXAMPLE: The default 'New' and 'Current' statuses have overlapping ranges. Memberships that meet both status range criteria are assigned the status with the lower weight.
Default?
The default status is assigned when there are no matching status rules for a membership.
Enabled?
Is this status enabled.

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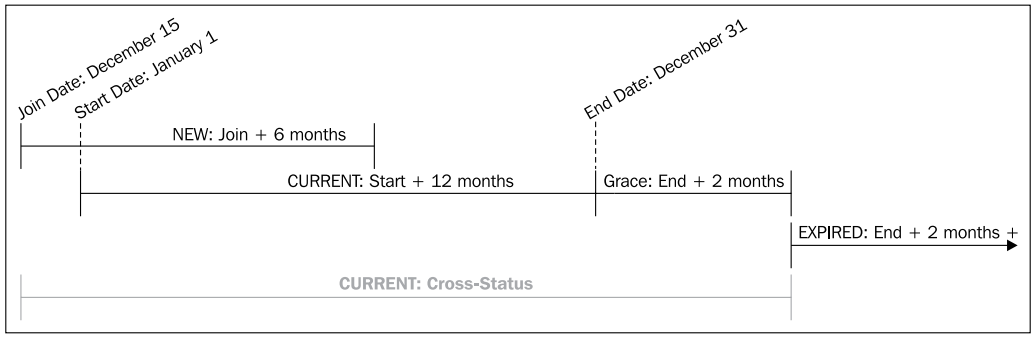
Each status rule will define a trigger (**Start Event**) that indicates when the rule is activated, and an optional ending point (**End Event**). Each of these may be offset by an adjustment value. Both events are measured from one of three dates—join date (the initial date the individual joined the organization), start date (the date when the membership period began), and the end date (the date the membership period will end or has ended).

It can be a little confusing to think through how the start/end events, associated with the join/start/end date, translate to your desired status. One way to think through this is to build a simple timeline representing each status:


Join Date: December 15
Start Date: January 1
End Date: December 31
NEW: Join + 6 months
CURRENT: Start + 12 months
Grace: End + 2 months
EXPIRED: End + 2 months +
CURRENT: Cross-Status

Let's take a closer look at how our timeline grid in the preceding diagram impacts the grace status settings. As you recall, the grace status is intended to represent the period after the membership end date, but before we regard the record as expired.

- **Start Event**: **End Date**, no adjustment
- **End Event**: **End Date**, **2 months**

What does this mean? Starting with the membership's end date, the record will be flagged as grace status for two months. After that period, it will be changed to the expired status, or whatever other rule then applies.

Be sure to designate one status as the default one. It will be assigned to a membership record in the absence of another matching rule.

In addition to setting the start and end events, you may consider marking a status as "administrator only" in the **Administrator Only?** flag. Flagging it thus means the status will never be assigned through rule matching. It can only be assigned if an administrator overrides the calculated membership status and assigns it. You may, for example, create an **On hold** status, which administrators use to flag members who must submit credentials or other paperwork before being considered **Current** members.

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The **Current Membership?** flag indicates which status types should be counted as current members in the dashboard grid displaying membership totals.

After setting up your rules, you may want to run some test records, changing the join, start, and end dates to match the various statuses you expect will be assigned.

Be sure to set up the cron job, as outlined in the *Configuring cron jobs* section, to trigger automated membership status updates. When run nightly, or on a periodic basis, it will review all membership records against the status rules and change them as necessary. If you do not set up the cron, your membership statuses will only be updated when a membership record is created or manually updated.

Setting up renewal reminders

By now, you should have your membership types set up, and be planning to create membership join and renewal forms to encourage new and existing members to work directly with the system through your website. Also, you will need to generate your periodic member renewal invoices to retain existing members.

Wouldn't it be great if CiviCRM could know when a membership record is nearing its end date and send the member a reminder e-mail, encouraging them to renew? Well, the good news is that CiviCRM provides just that type of capability! You may have noticed a section entitled **Renewal Reminders** at the bottom of the membership type configuration page. We use that to set up reminder e-mail options. Note that this feature is membership type-specific—you can choose not to enable renewal reminders for certain membership types or to configure different e-mail templates for use with different types.

There are two very important steps that must take place in order to use this feature—you must create your message template(s) and you must set up the cron job script (detailed in the *Configuring cron jobs* section). Assuming you are configuring these options for the first time, you may see a yellow message box informing you that no message templates currently exist and directing you to the appropriate page to set those up. You can access them through the menu by visiting **Administer** | **Configure** | **Message Templates**.

The message template, as the name suggests, will have the body text for the reminder e-mail to members and may also contain tokens—placeholders for contact record data. The **Message Templates** page has two tabs—**User-driven Messages** and **System Workflow Messages**. The latter is used for e-mails sent by the system in conjunction with core functions, such as receipt e-mails for contributions. Our concern at this time is **User-driven Messages**.

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Create a new message and provide an appropriate title, subject line, and body text. Remember that your message should be generic enough to apply to all members within the membership type(s) it will be sent to.

Be direct. Renewal messages are sent to constituents who already have demonstrated a level of interest and commitment to your organization. While you want to make the case for continuing their membership, you are primarily reminding them to renew. Keep the message direct and succinct.

Notice that above and to the right of the body text area is a link to insert tokens. A token is a placeholder representing a field in the system. When the e-mail is processed, the token will be replaced with the value for the field for each recipient. Using tokens allows you to customize the e-mail for each constituent, such as addressing each e-mail to "Dear First name".

Once you've finished creating your renewal reminder e-mail template(s), return to **Administer** | **CiviMember** | **Membership Types**, select a membership type for which you want to enable renewal reminders, and scroll to the bottom of the form. You now have the option of selecting the desired reminder e-mail template and indicating when you would like it sent (measured in days prior to the membership period end date).

You must set up the cron job, as detailed in the following section, to complete the configuration of the renewal reminder tool.

The e-mail template you've drafted is not limited for use in the automated reminder function alone. You may choose to send additional copies of that e-mail to individual members or to groups of members using CiviMail. The template functions as any other e-mail template and will be available throughout the system.

Configuring cron jobs

In the sections just covered, we reviewed two functions that require automated functionality—an action taken on the system that is not triggered by a user, but by a regular, time-based schedule. To accomplish this, we must set up a cron job.

As the name suggests, a cron job is a time-based action (chronological job) performed by the server. It basically consists of a reference to a script and the frequency with which it should be run. For a full discussion of cron scripts included with CiviCRM, refer to *Chapter 3*, *Installation, Configuration, and Maintenance*.

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Our immediate concern is the `UpdateMembershipRecord.php` script located in the `civicrm/bin/` subdirectory. This script is initially found as `UpdateMembershipRecord.php.txt` in your installation files. You must rename it to remove the `.txt` extension before setting up the cron. This is also done to remind you to review the contents of the file, as there is a variable within the script that must be manually configured. Open the file in your preferred text editor and locate the text `EMAIL@FIXME.ORG`. As the text suggests, this must be changed to your desired FROM e-mail address, which will be used when the renewal reminder messages are sent.

As of version 3.3, this file is no longer shipped with the `.txt` extension and the FROM address does not need to be configured directly in the file, as it now uses the default FROM address configured in the system.

Before setting up the cron, let's review the two purposes of this script discussed previously. The script first cycles through all membership records, comparing the existing status against the membership status rules, and updating the status appropriately. Secondly, the script checks the membership type and end date to see if a renewal reminder e-mail has been configured and should be sent out. If so, it sends the renewal e-mail and resets the reminder date.

Given the nature of this script, it is sufficient to configure the cron job to run once a day. Depending on the size of your membership, the script may require a significant amount of server resources to complete. Consequently, it is best to schedule it during a normal downtime in site traffic, such as in the middle of the night.

Depending on your server setup, you may be able to configure the cron job through a control panel interface, by connecting to the server through `ssh` to use the command line `crontab` command, or by placing a script in the `/etc/cron.daily/` directory that will invoke the `UpdateMembershipRecord.php` script. Refer to your hosting service documentation for details on your options.

When referencing the location of the `UpdateMembershipRecord.php` script in the `wget` or a similar command in your cron job, you must append three URL variables that serve as an authentication mechanism. This helps to prevent unauthorized users from running the script.

```
?name=<username>&pass=<password>&key=<sitekey>
```

For a full discussion of these variables, refer to the *Setting up cron jobs* section in *Chapter 3, Installation, Configuration, and Maintenance*.

When setting up your cron, be sure to test the script with the configured variables in a web browser to confirm that it is working correctly. You should also enable cron logging or configure e-mail-based logging to ensure that the cron runs correctly.

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Once successfully running, you will see your membership records updated as their status shifts from one type to another.

Working with memberships and daily management tools

As you work with membership records, you will want to easily access a snapshot of how your members are trending, search for members by specific type, status, or other criteria, and work with individual contacts and their membership details. CiviCRM provides a host of tools to do these things.

From the main navigation bar, do a quick review of the **Membership** menu:

- **Dashboard**: Provides a summary of current members by type and date range
- **New Membership**: Lets you create a new membership record quickly
- **Find Members**: Provides tools for searching through the member records
- **Import Memberships**: Allows you to take records created in your previous system or other source and import them into the system

We won't review each of these tools in depth, but will take some time to highlight key features and considerations.

The **Dashboard** is a great way to quickly achieve a system snapshot of members. Remember when we configured membership status rules and there was an option to flag a status as considered current? Well here is where that option plays out—the grid on the **Dashboard** page will display current members as defined by that option, broken out by current/renewals for the last two months and year to date.

Notice that much of that summary grid is hyperlinked. For example, you can click to quickly see members who renewed or joined in the previous or current month within a specific category or across all categories.

The **New Membership** menu item quickly creates a new membership record. Using this option, you enter the new member form and then search to select a contact (or create a new contact). Most of the time, you will first search for and view the contact record to ensure that it is the correct one before generating the membership from within it. However, this type of "alternate" workflow is common throughout CiviCRM.

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Find Members provides tools for searching membership records. While using this tool, the lens through which you are looking at data is membership records, and not contact records. This means that it's possible to have a single contact duplicated, if the contact has multiple membership records meeting the selected criteria. As with the other search tools, you are given the option of taking action on the results, such as exporting or generating an e-mail to the contacts. Note that the export will include membership record details as well as any contribution details associated with the membership.

CiviCRM provides a membership record import tool (**Import Memberships**), which is similar to the contact import tool discussed earlier in this book. The primary difference with this tool is that the imported membership records must link to an existing contact record. You cannot import membership records and create the owner's contact record. The match to a contact record can be done using the default and strict duplicate matching rule defined for the contact type, or with the internal or external contact ID. For best results, use the internal or external contact ID field as it ensures a correct match without relying on the deduping rules.

When importing, you choose whether the membership records are new or should update existing records. Unlike the contact import, these are strict options—if you choose to update, CiviCRM will require connection to an existing membership record (using the membership ID field); if no matching record is found, the import record will be rejected. It won't update the match if found, or create a new one if there is no match available; it will simply skip the record if no match is found.

In addition to fields that allow a match to existing contact records, the following fields are required when importing memberships:

- **Membership start date** (be sure to select the correct format in the first step of the import wizard)
- **Membership type** (must match the name of an existing type configured in your system)

Memberships in the contact record

Although searching, importing, and getting a sense of your overall membership picture is critical for your ongoing organization management, you also will want to get into individual contacts and work with their membership records.

While viewing a contact record, you see a **Membership** tab that displays a history of the contact's membership and buttons for creating new membership records.

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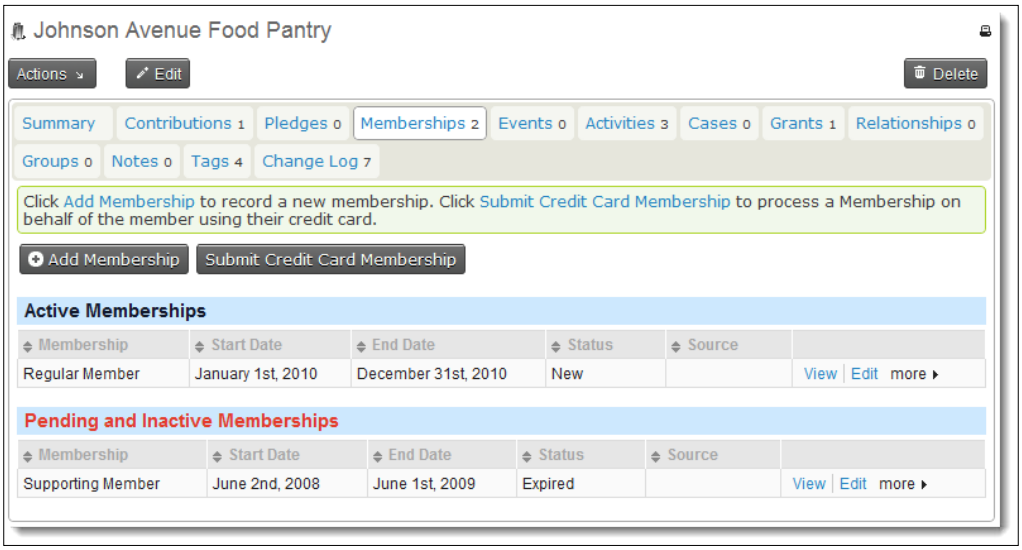
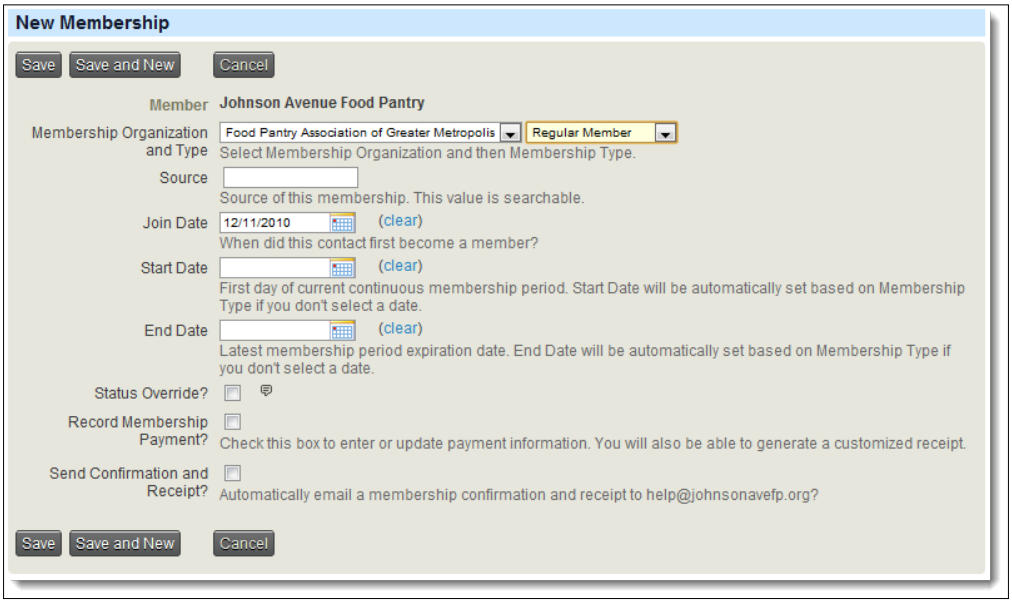


Notice that the membership listing may be split into two sections: **Active Memberships** and **Pending and Inactive Memberships**. The latter will include expired, canceled, or pending membership records.

The button to **Add Membership** is present above the membership listing. If you have a credit card payment processor configured in your site, you will see a second button to create a membership and process the credit card payment (**Submit Credit Card Membership**).


New Membership
Save
Save and New
Cancel
Member
Johnson Avenue Food Pantry
Membership Organization and Type
Food Pantry Association of Greater Metropolis
Regular Member
Select Membership Organization and then Membership Type.
Source
Source of this membership. This value is searchable.
Join Date
12/11/2010
(clear)
When did this contact first become a member?
Start Date
(clear)
First day of current continuous membership period. Start Date will be automatically set based on Membership Type if you don't select a date.
End Date
(clear)
Latest membership period expiration date. End Date will be automatically set based on Membership Type if you don't select a date.
Status Override?
Record Membership Payment?
Check this box to enter or update payment information. You will also be able to generate a customized receipt.
Send Confirmation and Receipt?
Automatically email a membership confirmation and receipt to help@johnsonavefp.org?
Save
Save and New
Cancel

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After selecting the desired membership type, review the other fields and complete them as necessary. Note that you do not need to manually set the start and end date, unless they should be different from the defaults that would be calculated as described in the **Membership Type** configuration section.

The **Status Override?** flag is used for manually forcing a certain membership status on the record. This should be used carefully and sparingly. Once you indicate that a status is overridden, the periodic membership update script and any edits to the record will not calculate the status. This is typically only used for instances where you have a special contact in the system who should be handled within an existing membership category but is not charged the associated fee or required to renew. This option should also be used when marking a membership as canceled, in which case you are purposely removing it from the status rule structure. Take care when using this option as you lose the ability to manage your contacts through rule-based status types.

If you are using status override to mark a membership as permanently current because they are a lifetime member, consider setting up a lifetime membership type with duration set to one lifetime, as this may be a more appropriate way to manage such contacts.

Record Membership Fee provides fields for entering payment details connected to the membership. Completing the fields will result in the creation of an associated contribution record. It is important to make use of this option whenever possible, rather than handling the contribution record separately, as it creates a connection between the membership and contribution record that can be referenced later. It also streamlines the process significantly as you process the membership and payment in a single form.

As the label suggests, **Send Confirmation and Receipt** will generate an e-mail to the user with details about the membership and contribution records created.

Returning to the membership tab listing, let's understand how CiviCRM handles membership records and renewals. As outlined earlier, there are three dates associated with memberships: join date, start date, and end date. The **Join Date** is the date when the membership record is first created. The **Start Date** is the date the membership period begins. For fixed period membership types, that may actually precede the join date. For example, if a membership type runs for a fixed period of one year, starting January 1, a new membership created on February 12 will have a join date of February 12, but a start date of January 1. Rolling period membership types will typically have the same date for the join and start date fields. The **End Date** is calculated based on the membership type configuration and start date value.

The idea of renewing a membership record involves extending the end date by the membership period. A membership from January 1, 2009 through December 31, 2009 that is renewed for one year will simply have the end date changed to December 31, 2010.

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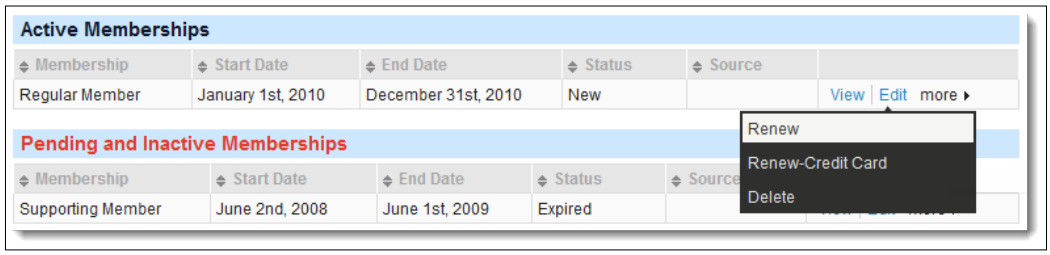
Many organizations are used to thinking about membership history as a series of separate records. Using the preceding example, you would see a record for 2009, and a second record for 2010. If you are used to that structure, take some time to think through how this alternate format impacts your workflow. Rather than thinking of membership records as distinct periods, you must view them as an ongoing, linear record. After adjusting the way you think of membership to fit this model, you will find that the structure can be very powerful when seeking to conduct effective searches on member history.

CiviCRM facilitates the renewal process by including a **Renew** and **Renew-Credit Card** option in the **More** drop-down menu.



The renewal form only requests information about the renewal date, payment, and receipting. Since a renewal extends an existing record, all the other values are fixed or calculated based on existing data.

Note that the membership records that are inherited via relationships will not have options available to edit or renew the record, but instead will have a link to the primary or owner's membership record where those functions can take place.

One common area of confusion is with regard to membership renewals for expired memberships. If a certain record exists, but is expired, how should the record be handled if a renewal is triggered? CiviCRM processes these records by retaining the original join date, but re-setting the start and end dates to new values based on the date the renewal took place.

Depending on how you prefer to track membership history, this structure may not be ideal as you lose some of that older data. You may prefer, for example, to create a new membership record for expired members in order to retain the older historical data separate from the new record. Doing so allows you to note the membership lapse that took place between the old and new records.

At this point, we've covered the major functions involved in configuring and working with membership records through the administrative tools. Let's see how this translates to the frontend of your website.

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Forms to solicit new members and retain the existing ones

Having great administrative tools is wonderful, but we also want to be able to expose membership signup and renewal pages on our website in order to solicit new members and retain existing members. In CiviCRM, we do this through a contribution page.

Contribution pages are used to solicit funds from site visitors. This may be for general donations, sponsorships, pledges, campaigns, or in our case, memberships. Begin by visiting the **Contributions** | **New Contribution** page.

CiviCRM will walk you through a nine-step wizard to configure your page. We will not review all of the options available, but focus on the key elements pertinent to membership signup pages.

In the first step of the wizard, you will see a **Contribution Type** field. Its use, for our purposes, can be a bit misleading. As you recall, when we defined membership types, we assigned a contribution type to each. When processing memberships through a contribution page, whatever contribution type was assigned to the membership type will be used for the respective transaction. However, you may construct your contribution page so that you collect memberships and also allow additional donations to be made. In this scenario, whatever contribution type you choose will be used for the additional non-membership contribution.

Notice that there is an option that allows individuals to sign up on behalf of an organization. By default, CiviCRM will treat users interacting with your website as individual type contacts. After all, people use computers, and not organizations. However, if your membership categories are connected to organizations, you should select this option and indicate if the "on behalf of" functionality should be optional or required. Note that you may still collect information about the individual completing the form; the signup form will treat this individual as a related contact (employee) of the member organization.

In the second step, you configure the options related to the payment, such as what processor to use, whether you want to allow the "pay-later" capability, and whether the user may contribute money beyond the membership fee. Consider this last option carefully—do you want your signup form to focus entirely on the membership options, or is your membership structure closely linked to a broader donation-solicitation effort?

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If the "pay-later" option is enabled, visitors will have the option of clicking a box to indicate intent to submit payment at a later date. After the form is submitted, their membership and corresponding contribution record will be marked as pending. When you receive the payment, simply update the contribution record—enter the payment method, details, and mark the status as complete. Doing so will also mark the membership as complete and set the join date to the date the payment was received.

The third step is where you enable and configure membership signup capability. This single contribution page can be used for both membership signup and renewal forms, and consequently includes a title and description field for both purposes. The renewal title and description will only display if the user is logged into the website and CiviCRM recognizes an existing membership record. Otherwise, the membership join text is used.

However, this does not mean that CiviCRM will always treat the membership record as a new one. If a non-authenticated user (someone who is not logged in to the site) completes this form in its membership join version, CiviCRM still attempts to match them with an existing record in the system. If it finds a match and the contact has an existing membership record, it will renew the record instead of creating a new one.

Toward the bottom of this form, you determine which membership types will be available (you may choose to organize your membership types into multiple forms), whether membership signup is required, if the membership fee should be processed separately from other contributions received (if configured on the previous screen), and if membership fees should be visible.

Note that the separate membership fee option is not available for Google Checkout and PayPal Standard payment processing, as they do not support multiple transactions in a single submission process. This option should be selected if you want the contribution associated with the membership and the additional contribution amount to be assigned different contribution types, as noted earlier. For example, you may want the membership fee to be processed as a **Member Dues Contribution** type, and any additional amount to be processed as a **Donation Contribution** type.

The next step of the wizard provides options for configuring the **Thank You** screen and e-mail receipts your contact will receive. Step five configures the **Tell-A-Friend** feature, which is more common for fundraising campaigns than membership signups. If enabled, contacts completing the membership form will be encouraged to tell their friends about your organization using the suggested text that you provide. If you rely on word-of-mouth networking to get your message out, this feature may be useful to you.

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In step six, you have the option of selecting up to two profiles for inclusion in the form. Recall that a profile is a collection of fields. By default, the membership signup form will only have one required field—the e-mail address. Most of the time, you will want to collect additional information about your members, such as their name, address, phone, and so on. You may first need to create a custom profile or edit one of the existing ones such as **Supporter Profile** or **Name and Address** at **Administer | Customize | CiviCRM Profile**.

If you have come to this step and have not yet created your custom profile, don't worry—you can proceed with the contribution page wizard and return at a later time to select your desired profile.

If you have enabled the option to allow individuals to sign up on behalf of an organization, any profile you assign to the form in this step can only be used for individual fields. The information collected for organizations is not configurable through the interface at this time.

Premiums (step seven) are gifts that you offer to members if they contribute at a certain threshold. For example, you might advertise that a $50 donation will receive a travel umbrella with your organization's logo. This is generally oriented toward donation pages rather than membership signup forms, but may still apply if you tier your memberships to encourage higher levels of giving with extra benefits. Before configuring this step you must have created a premium set (accessible through **Contributions | Premiums (Thank-you Gifts)** or **Administer | CiviContribute | Premiums (Thank-you Gifts)**).

If your membership form is part of a larger campaign, you can create a thermometer-style widget in step eight to track contributions. For example, let's say you initiated a member-get-a-member campaign seeking to raise $20,000 by the end of the year. After enabling and configuring your widget options, you add the code generated to your site homepage, encouraging people to join. Any members who join through this contribution page will have their fee added to the campaign total and reflected in the widget. This goal-oriented campaign model is more common for donation-based solicitation, but could still be creatively used for membership-based purposes.

The final step in the wizard is for personal campaign pages, which also may be more relevant to non-membership contribution pages. A personal campaign page, or PCP, empowers your constituents (such as existing members) to solicit funds on behalf of your organization. In doing so, they receive a "soft credit" for their role in raising funds. Using the example from the widget discussion, you could go one step further and let each of your existing members create and customize their own membership promotion page to use for their correspondence with friends and colleagues.

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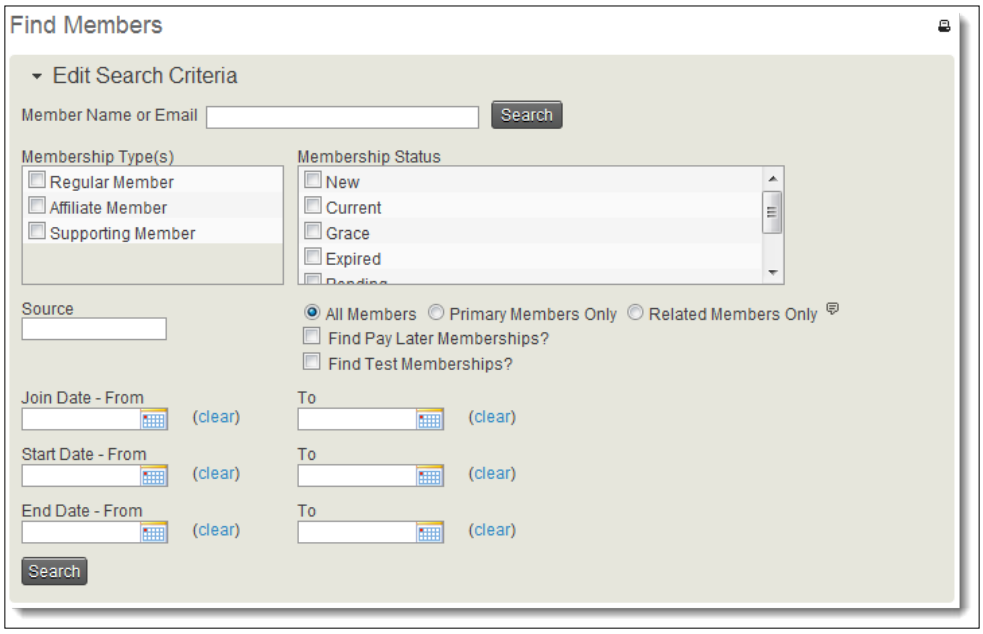
FPAGM is excited to offer online membership signup and renewal forms. They look at this as an opportunity to streamline the member signup process such that more businesses and organizations will be inclined to join.

The website administrator creates a membership contribution page focusing primarily on the key configuration elements for membership. Since their **Regular** and **Affiliate** membership types are organization-based, they choose to require signup on behalf of an organization and only expose those two membership types. At a later time, they will create another contribution page for the **Supporter** membership type, which is geared more toward individual donations.

While membership is organization-based, they want to collect details regarding the primary contact (individual) they will interface with at the business or organization. Using an existing profile as a basis, they use the **Copy Profile** option and adjust the fields to collect name, address, and other key details. After completing the configuration, they test the page and enable it as a menu item on their site.

Searching and reporting

We mentioned earlier the **Find Members** tool on the **Membership** menu. Let's take a few moments to explore the options available and review membership reports.



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Most of the search options here are self-explanatory—you may search by a contact name or e-mail, membership types, and membership status. For these types and statuses, selecting multiple options is inclusive: the result will yield records matching *any* of the selections.

Below the membership status field is a set of important options if you are making use of membership inheritance via relationships. Recall that you can configure a membership type to extend the membership to other contacts based on the selected relationship(s). If ACME Corp. is a member and the employer/employee relationship is selected for their membership type, all employees of the business will receive a membership record as well.

While this functionality is useful, it may be confusing to understand how you calculate members. If ACME has three employees, a membership search would yield four results for this one membership record. That may be useful when you are sending out a broadcast e-mail and want all members to receive it, but if you are seeking to count the number of actual membership records that were purchased, your numbers will be inaccurate.

The three options on this form help you control your search as it relates to membership inheritance. Do you want to view all the members, just the membership record owners (primary members), or just those who are members through inheritance?

As one would expect, the three date fields associated with membership records are searchable as date ranges. With some creative thinking, these date range search fields can generate some powerful tools for understanding your membership. Consider the following examples:

- You want to know who did not renew in the previous year (2010) for a membership type that has a fixed period of January 1 through December 31: Set the **End Date – From** and **End Date – To** fields to December 31, 2010. All members who joined or renewed in 2010, but did not renew for 2011 will be included.
- You want a list of members who joined in the last few years: Set **Join Date – From** to January 1, 2008. Any join date occurring after that date will be provided in the result.
- You want a list of members who joined sometime in 2006 to 2010, but did not renew in 2011: Set **Join Date – From** to January 1, 2006, and **End Date – To** to December 31, 2010.

These example searches illustrate the benefits of the date structures in membership records.

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CiviCRM is packaged with several reports geared toward membership management. From the navigation bar, select **Reports | Create Reports from Templates**. Before we dig in, let's review some terminology and concepts as it relates to CiviCRM reports:

- **Report Template**: Templates are the guts of a report—the code that determines what fields, filtering, sorting, grouping, and visual options are available.
- **Report Instance**: Often just referred to as a report, this is a specific implementation, or instance, of a template. In other words, you choose specific criteria and options available in a template and save it, print it, or export it.

A single report template may have multiple (or no) instances associated with it. Each instance presumably has different filters and settings rendering different results, though based on the same originating template. Almost all of the report templates that ship with CiviCRM also have an initial report instance created. Many of these are found in the **Reports** menu drop-down, and all are listed at **Reports | Reports Listing**.

There are three templates available for membership records:

- **Membership Report (Summary)**: The options available are geared toward generating summary totals of members by date or membership type. The resulting report includes details on any contributions associated with the membership records.
- **Membership Report (Detail)**: This report is geared toward the membership records themselves. You can select which contact and membership-related fields you would like listed in the results and can filter on standard options such as membership types and status, as well as contact-related selections such as groups and tags.
- **Membership Report (Lapsed)**: This report is a bit more specialized, as it displays the records whose membership has lapsed (are no longer current). It is intended for organizations that want to reach out to lapsed members in a focused way to encourage them to renew or rejoin the organization.

From the **Reports | Create Reports from Templates** screen, you can create a new report as follows:

1. Select **Membership Report (Summary)**.
2. Choose the "group by" and filter options as you like. For example, leave the defaults for the **Group by Columns** (both **Join Date** (**Frequency** = **Month**) and **Membership Type** enabled), set the filters so that **Join Date** = **This Year** and the **Contribution Status** = **Completed**.
3. Click on **Preview Report**.
4. In order to proceed with saving the report, you must have valid results

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generated. In other words, you must have at least one completed membership signup. If your report yields no results after clicking preview, create a test membership for yourself at **Memberships** | **New Membership**.

5. Review and adjust the **Report Criteria** as necessary. After making changes, click on **Preview Report** to refresh the results.
6. Once you are satisfied with the report results, click to expand the **Create Report** panel. The options in this section are grouped into three areas:
    - In the first one, you name your report and can modify the header and footer region that will be generated if the report is published to `PDF`.
    - In the second one, configure the report to be e-mailed to the desired contacts.

For the report via e-mail functionality to work, you must create a cron job to trigger the mailings. For more details on installation and configuration, see *Chapter 3*, *Installation, Configuration, and Maintenance*.

    - The final section controls permissioning (Drupal only) and lets you add the report to a menu item or make it available to the CiviCRM dashboard page. Choose an appropriate permission for viewing the report, such as **access CiviMember**.
7. Click on **Create Report**.

Once saved, the report can be retrieved with your selected settings for viewing, printing as a `PDF`, or exporting as a `CSV` file. For a full and detailed discussion on reporting concepts and tools, see *Chapter 12*, *Telling Your Story: Building Reports*.

Big Picture and other tools

Membership management rarely occurs in a vacuum. It's most likely that your members will also be your authenticated (logged in) website users, a primary target for event registrations, and recipients of most of your communication via snail mail, e-mail, or other means.

Let's consider some ways your membership may impact other areas of CiviCRM and review some third party extensions that may be used with your site and members.

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Common functions in CiviCRM

It's not uncommon for member-based organizations to have a "members-only" section in their website. This secure access area will require a Joomla! or Drupal user login account. If you have created a contribution page for membership sign-up, you can include a profile that has the user account creation option enabled. As contacts complete the membership application form, they will be able to create their user account to access the site.

As you work with your members, it's likely that you are primarily concerned about your current members at any given point in time. While it is useful to visit the **Membership** | **Dashboard** page and see a snapshot of your current members broken down by type, it's more likely that you are mailing, e-mailing, or otherwise working with current members through other means. An easy way to have quick access to a list of current members is by creating a smart group.

Using **Search** | **Advanced Search**, expand the **Memberships** panel and select your desired membership types and the new, current, grace statuses, or your customized current statuses. After running the search, select all contacts and use the action drop-down to create a new smart group.

Recall that smart groups are saved searches. They are criteria-based, which means that when new members join the organization or existing membership records expire, the smart group you've just created will always display the current list of members at that point in time.

Now that you have this saved search, you can easily export the list for mailings or use the group for a broadcast e-mail. In addition, the group could form the basis for an online directory.

Membership directories

It's worth taking a moment to think through the steps required for setting up a membership directory as this is a common goal and function for many member-based organizations.

The usefulness and value of an online membership directory is indisputable. If you are an industry-based association, it's likely that you exist in part to help your members more effectively reach potential customers. If you are a professional society, you are likely seeking to foster relationships among members for professional development and networking.

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Perhaps you've addressed these needs in the past by publishing a printed directory. The process involves collecting updated information from members, entering it into a database, exporting the information and laying it out in design software, soliciting advertisements, proofing, sending to the printer, and finally disseminating to members through the mail, only to receive e-mails and phone calls as soon as it's received, alerting you to the outdated information it contains for a significant percentage of your members. Sounds like fun!

While an online directory does not eliminate the need for work or in any way guarantee 100 percent accurate data, it does streamline the process significantly. Since your directory will pull data from your database in real-time, there is no lag; once you receive updated contact information for a member and update it in CiviCRM, it will be available on the directory. Further, if you expose a profile to members allowing them to update their own contact information, you potentially reduce data entry (and to some degree responsibility) for the information.

The steps to build your online directory are fairly simple. Begin by constructing your smart group of current members as described in the last section. Doing so ensures that only members in good standing will be exposed to the website directory. As soon as someone fails to renew in a timely fashion and rolls over to the expired status, they will be removed from the directory listing (and the membership benefit it provides).

Recall from *Chapter 5*, *Collecting, Organizing, and Importing Data* that we looked at using profiles as a search tool and that one of the advanced options when configuring a profile is to limit the search results to a selected group. We use this option to restrict the directory to only your current members group.

Proceed by adding and configuring fields for the profile. When adding fields, you will determine which are searchable, which should be in the **Results** column (remembering that you likely have limited screen real estate for the columns), and which will be in the detail view. The directory page will begin by offering users a search form, through which they will locate and view details for members.

Once the profile is complete, Joomla! users may use the menu system to add a **Profile Search** item and select the appropriate profile. Drupal users can access the search page by visiting `http://yourdomain.org/civicrm/profile/search&gid=#&reset=1`, where "#" represents the profile ID.

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By default, the profile search opens to display just the search form itself. Adding `&force=1` to the URL will cause the page to open with the form and a list of contacts (if restricted to a group, it will display just the contacts in this group). Adding `&search=0` will open the page with just a listing (no search form). Adding `&map=1` will include a map with the geocoded records marked (you must have address geocoding enabled in your system).

Third-party extensions

Both Joomla! and Drupal have several third-party extensions that have been developed to expand the integration of CiviCRM into your website. Several of these will be of interest to member-based organizations.

Three Joomla! extensions expand membership-related capabilities. You can read summaries and find downloads at `http://wiki.civicrm.org/confluence/display/CRMDOC/Joomla!+Extensions+for+CiviCRM`. You can also find them on the Joomla! Extension Directory.

- **CiviAuthenticate**: This plugin adds a second layer of authentication to the core Joomla! authentication that requires a user attempting to log in to have a membership in good standing. The plugin configuration includes which status level is the threshold for allowing access and redirection links for the various possible outcomes (membership is expired, no contact record found, or bad password).
- **CiviUser**: This extension replaces the core Joomla! user account creation process with one that interacts with CiviCRM. With this extension, only members in good standing may create a username and password account. This extension is accompanied by a module that can replace the standard Joomla! login module.
- **Gloriant CiviCRM**: This extension provides several functions, but of interest to member organizations is the ability to create frontend article permissioning based on CiviCRM membership. For example, if you have a certain membership category which should have article creation ability, this extension can provide that level of access control.

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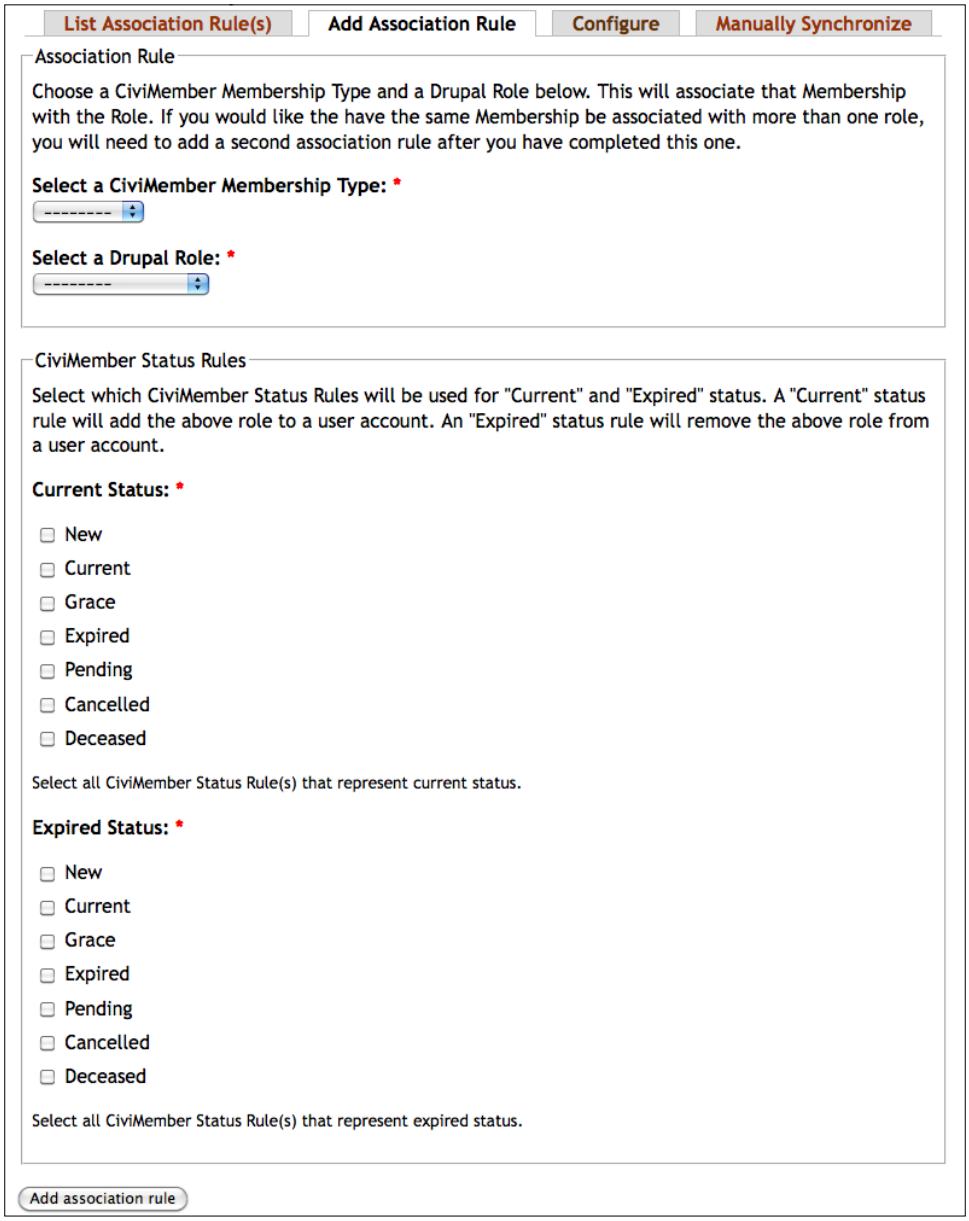
Drupal/CiviCRM integration comes in a variety of forms. The CiviMember Roles Sync module that is included in the CiviCRM tarball is the most relevant one in this context (see `civicrm/drupal/modules/civicrm_member_roles`). After enabling this module in Drupal, it can be configured by clicking on **Site Configuration** | **CiviMember Roles Sync** | **Add Association Rule**:


List Association Rule(s)
Add Association Rule
Configure
Manually Synchronize
Association Rule
Choose a CiviMember Membership Type and a Drupal Role below. This will associate that Membership with the Role. If you would like the have the same Membership be associated with more than one role, you will need to add a second association rule after you have completed this one.
Select a CiviMember Membership Type: *

Select a Drupal Role: *

CiviMember Status Rules
Select which CiviMember Status Rules will be used for "Current" and "Expired" status. A "Current" status rule will add the above role to a user account. An "Expired" status rule will remove the above role from a user account.
Current Status: *
New
Current
Grace
Expired
Pending
Cancelled
Deceased
Select all CiviMember Status Rule(s) that represent current status.
Expired Status: *
New
Current
Grace
Expired
Pending
Cancelled
Deceased
Select all CiviMember Status Rule(s) that represent expired status.
Add association rule

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Each CiviCRM membership type can be associated with one or more Drupal roles. When first using this module we recommend selecting every membership status once for each Association Rule, either in the **Current** or **Expired Status** sections. Drupal permissions can be set for the associated roles in Drupal at **User Management** | **Permissions**. After creating or changing the association rules, the new permissions for a user will take effect by default the next time they log in. If necessary, new Drupal roles can be created at **User Management** | **Roles**. Using this tool, members can be permissioned to access, create, or delete content of various kinds and use the Drupal functionality in extremely fine-grained ways.

These are only a sampling of some of the modules and extensions available to help you take advantage of CiviCRM structures in your overall website implementation.

Summary

In this chapter, we've seen how CiviCRM provides robust membership management and reporting tools for administrators and the ability to expose member sign-up and renewal forms to your website. Specifically, we have:

- Walked through the essential configuration steps required to get up and running with membership management in CiviCRM, taking time to understand the core concepts with how CiviCRM deals with membership records
- Reviewed the tools available for monitoring and tracking your membership records and seen how individual membership records are handled within the contact record
- Set up a website form to allow contacts to join or renew their membership, while discussing the broader options available for contribution campaigns
- Understood how the membership search tool can be used to find subsets of members, in particular with regard to the various date fields
- Stepped through the creation of membership reports from one of the three membership report templates
- Took a step back to understand how membership relates to your broader website objectives, and reviewed other tools available for enhancing membership-related functionality

In the next chapter, we will look at event management and see how CiviCRM lets you construct complex event programs and set up online event registration.

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9
Managing Events

For many organizations, events provide one of the best opportunities to interact directly or face-to-face with members, supporters, and other constituents. Constituents are exposed to your organization and develop deeper ties with it and other attendees when they attend your events. Whether you host large conferences and expos, training workshops, webinars, political rallies, user group meet-ups, support roundtables, professional accreditation programs, or any other kind of event, their role in your overall CRM strategy is significant.

Registrant processing and event promotion are often the most challenging, time consuming, and important pieces of the management process. CiviCRM provides flexible event management tools to define the nature of the event, determine the data and fees that must be collected, track participants as they register online or are entered by staff through the administrative tools, and develop the lists, nametags, and other resources you need to present an outstanding professional event.

This chapter will focus on the primary tasks and responsibilities involved in event management, including:

- Configuring your event and understanding the options available
- Promoting the event through information, registration, and participant listing pages
- Processing registrants through the administrative interface
- Reviewing registration progress and tracking statuses
- Ensuring good bookkeeping practices for registrants
- Searching for participants and running reports

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Why host events?

Before digging further into things, it's worth taking a minute to ask the questions: why would you host events, and what exactly is an "event" as it relates to CiviCRM?

Many not-for-profits exist as organizations that people donate to, become members of, or support in other ways. The purpose and services many organizations provide are not oriented around "walk-in" support or other face-to-face interactions with constituents, apart from events.

Events provide an important (and often, the only) in-person interaction with your supporters, members, and others committed to the mission and vision of your organization. As such, the face and voice of the organization is most clearly seen and realized during events.

So what exactly is an "event"? In CiviCRM, event management tools allow you to do the following:

- Publish and advertise an event description including date, time, and location
- Register participants
- Calculate and collect fees
- Collect data about participants
- Track registrant's status
- Use more advanced elements, such as self-registration forms on your site with automated waiting lists

You are not likely to use the event tools for very small group meetings, such as a one-to-one meeting with a constituent, board meetings, committee meetings, and other such no-fee, basic events. For these events, it will be easier and simpler to use a CiviCRM activity, either with the pre-configured meeting activity type, or through your own custom activity types.

Building and promoting your event

The first step in event management is to configure your event in the system. Once configured, you can begin collecting registrations and tracking participants. The event tools all reside under the navigation bar's **Events** menu. As with other areas of CiviCRM, the event administration tools are not always provided in a simple, task-oriented workflow. You are likely to find that the creation, configuration, registration, tracking, reporting, and managing happen in a more iterative pattern, rather than a linear one. We will begin by walking through the event creation process, touching on the various options available, and may circle back later to delve deeper into various areas.

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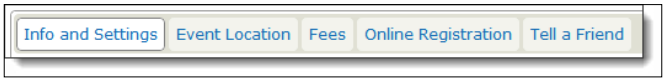
Use the **New Event** option to begin the process of setting up an event. This opens up an initial information and basic settings form. After saving it, you will be directed to a tabbed interface where you optionally configure four other settings areas (or return to adjust this first form).

You should carefully work through each tab in a sequential wizard-style way when first becoming familiar with the event tools.



Information and settings

The first form defines basic information about the event, including its category (type), title, description, dates, and so on. You may notice that the very first field on this form is for selecting an event template. If no event template exists, a notice to this effect will appear at the top of the page.

Event templates are very useful if your organization hosts a number of very similar events, such as a monthly breakfast seminar series, or a bi-monthly training workshop. From one event to the next, the structure, fees, location, and perhaps even the basic description remains similar. In such cases, you can save time and reduce errors by setting up an event template under **Events** | **Event Templates**. The template creation tool is almost identical to the five-tabbed form we will be working through now, with the exception of a few fields removed (such as event dates) that are presumed to be unique for each event.

When creating a template, complete only those fields which are common to all (or most) events of this type. For example, if your monthly breakfast seminar hosts different speakers on different topics, you will want to leave the summary and description fields empty.

When a previously configured template is selected while on the **Info and Settings** form for a new event, the event is pre-populated with any data stored in the template. You will have the opportunity to review, adjust, and fill in any fields in your event. Once a template has been selected for a new event, there is no association back to the template. In other words, changing template settings at a later date will have no impact on existing events that used the template. Its only purpose is to pre-populate the event, and in doing so, to facilitate the event creation process.

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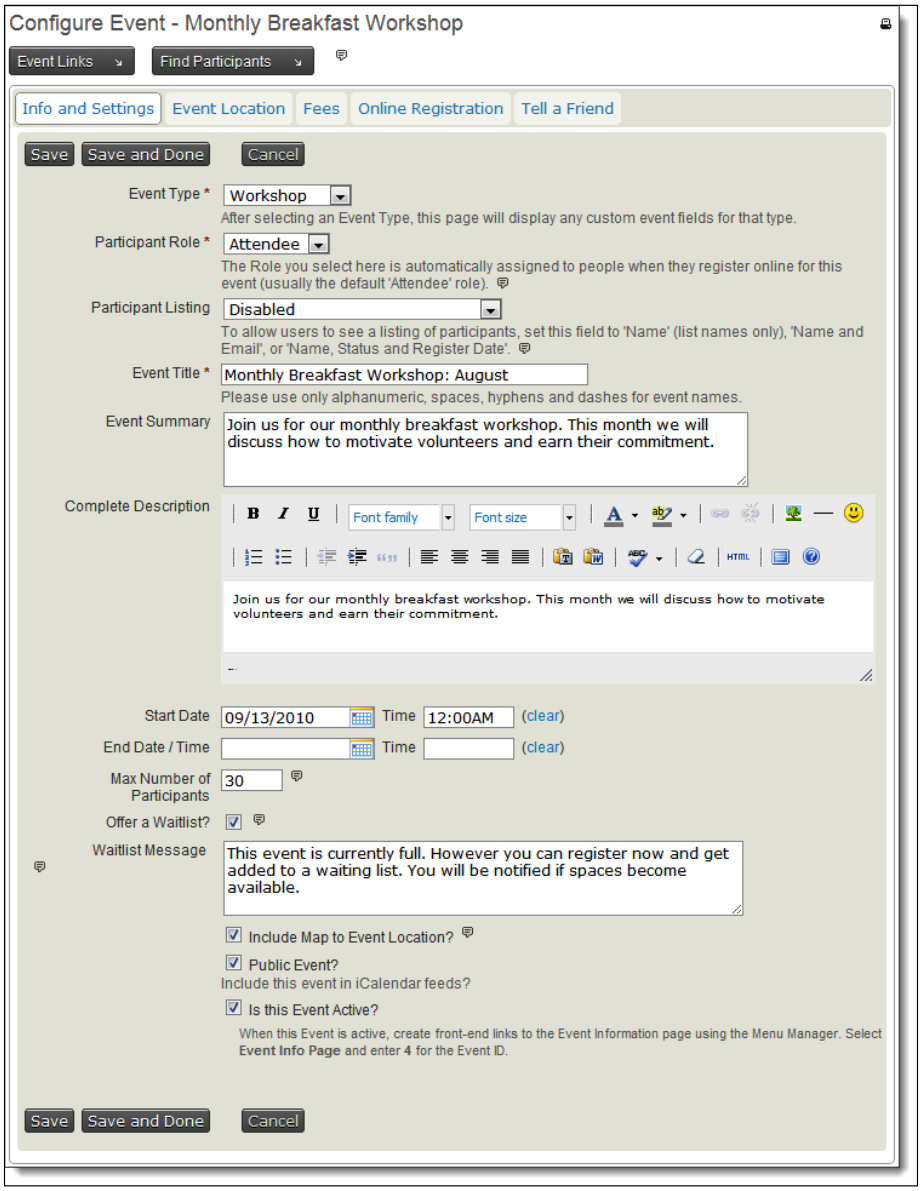
Returning to the initial event creation form, we see event type and participant role fields. The event type is used to categorize your events, which can be useful when analyzing and managing events. You can, for example, define an event type for your annual fall conference and later run searches based on the event type, such as displaying all constituents who participated in any of the fall conferences over the last five years. The event type options are managed under **Administer** | **CiviEvent** | **Event Types**.


Configure Event - Monthly Breakfast Workshop
Event Links
Find Participants
Info and Settings
Event Location
Fees
Online Registration
Tell a Friend
Save
Save and Done
Cancel
Event Type *
Workshop
After selecting an Event Type, this page will display any custom event fields for that type.
Participant Role *
Attendee
The Role you select here is automatically assigned to people when they register online for this event (usually the default 'Attendee' role).
Participant Listing
Disabled
To allow users to see a listing of participants, set this field to 'Name' (list names only), 'Name and Email', or 'Name, Status and Register Date'.
Event Title *
Monthly Breakfast Workshop: August
Please use only alphanumeric, spaces, hyphens and dashes for event names.
Event Summary
Join us for our monthly breakfast workshop. This month we will discuss how to motivate volunteers and earn their commitment.
Complete Description
Font family
Font size
Join us for our monthly breakfast workshop. This month we will discuss how to motivate volunteers and earn their commitment.
Start Date
09/13/2010
Time
12:00AM
(clear)
End Date / Time
Time
(clear)
Max Number of Participants
30
Offer a Waitlist?
Waitlist Message
This event is currently full. However you can register now and get added to a waiting list. You will be notified if spaces become available.
Include Map to Event Location?
Public Event?
Include this event in iCalendar feeds?
Is this Event Active?
When this Event is active, create front-end links to the Event Information page using the Menu Manager. Select Event Info Page and enter 4 for the Event ID.
Save
Save and Done
Cancel

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Custom data fields used to collect information about your registrants can be configured based on these event types. Since events of the same type will often have similar data collection needs, this is a useful and efficient way to repurpose fields for multiple, similarly-structured events. We will discuss custom data later in this section when we review the use of profiles. They are created and configured through **Administer** | **Customize** | **Custom Data**.

Participant roles categorize the nature of the participant. For example, your event may have attendees, guests, speakers, staff, volunteers, and other types of registrants you will track, but also want to classify. Participant roles are managed through **Administer** | **CiviEvent** | **Participant Roles**. Similar to event types, custom data sets may be constructed based on the participant's role. In this way, speakers can be prompted to provide a title and description of their talks, exhibitors can be asked questions about their needs for space, power, and equipment, volunteers can be asked their preferences for an assignment, and basic attendees can be asked their breakout session preferences.

When defining a participant role, you have the option of deciding if a role will be counted. We will see later in the event management tools that CiviCRM provides up-to-date counts of your participants, organized into various categories, one of which is the main participant count. Typically, you will want to "count" any attendees who have paid or have committed to pay, but exclude from your count any attendees who have canceled or are in a non-attendee role. Many organizations will not count speakers or staff when reporting the number of attendees for a conference. By creating a staff role and choosing to not count it, you can still track the fact that they were present at the conference and generate name tags from the system for them, but exclude them from the counts provided to your Events Committee or Board of Directors in various reports. Be clear on who is included in your counts as there are some purposes for which you will want a "full" count, such as the number of meals required at the event.

Returning to our form, the selection of a participant role in this location determines what role will be assigned when participants register using the event registration form. In most cases, you will select the **Attendee** role, as that is the standard role intended for event participants.

Peer pressure may be a useful tool in your event promotion toolbox. CiviCRM provides the option of exposing a participant listing to site visitors. When visited, a current list of all participants will be displayed.

There are three listing templates included in the standard installation, namely **Name Only**, **Name and Email**, and **Name, Status and Register Date**. Unfortunately, at this time, there is no interface for setting up alternative collections of fields to be included in listings. If you have the ability and resources to edit PHP and Smarty `.tpl` templating files, you can create more templates and tell the system about them through **Administer** | **CiviEvent** | **Participant Listing Templates**.

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While participant listing pages may serve as an effective peer-pressure promotion tool, they may also be perceived as invasive to privacy by your attendees. Make sure the nature of the event (and the nature of your constituents) supports displaying such a list. In particular, be sensitive to the use of the name and e-mail template, as some contacts may not want their e-mail information disseminated in this way.

Enter the title of your event, keeping in mind that it will be publicly visible in the event information and registration pages. You also will want the event to be uniquely named to avoid confusion with other events. For example, if you host an annual conference, you might name it: Annual Conference 2010, Annual Conference 2011, and so on.

Use the **Event Summary** and **Complete Description** fields to describe the event, such as the topics covered, speakers, audience, and so on. As the name suggests, the **Event Summary** field should be brief and succinct. It will be included in RSS and iCal feeds generated by the system, which you may use for promotional efforts. The **Complete Description** field should be more complete, and is displayed on the event information page.

Your RSS feeds allow other websites to automatically pull content from your site and display it on their site. The event feeds include information about your events, such as links to send their visitors to your registration pages. iCal feeds are another similar format for publishing your event information. People can set up their Google Calendar, Outlook, and other similar calendaring applications automatically to read in these feeds and display your events on the right date and time.

Define the event's start and end date/time. For a single-day event, it is sufficient to just complete the start date field.

We'll spend a bit of time in a moment on the waitlist option. Proceed to the final set of fields on this first step of the event wizard, and click to enable or disable the following options:

- **Include Map to Event Location?**: Inserts a Google or Yahoo! map on the information page with the event location plotted. You must have a location defined on the second step of the wizard and must have geocoding configured in your **Global Settings** to make use of this function.
- **Public Event?**: Determines if the event appears in RSS/iCal feeds, in the HTML event listing page, and in Drupal's CiviCRM **Upcoming Events** block. Turn this off if you have "invitation-only" events that you don't want to publicize through the automated methods.

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- **Is the Event Active?**: Enables or disables the event. A disabled event will be hidden from RSS/iCal/HTML listings and cannot be visited through event information pages or registration forms. Be careful about disabling past events thinking they would not be accessed by site visitors. If you have older content articles on your site that reference the event information page, it's possible that people will visit older events to learn what information was covered. We will see later on that there are options for limiting the date/time window when people may register for the event, so you do not need to be concerned about people registering for past events inadvertently.

Waitlisting

One of the more advanced tools available in the event management process is the ability to define a maximum number of participants for an event and determine how to handle people who try to register after that maximum is reached. This is an important feature, as one of the consequences of providing online registration forms is that you lose some control over the event management process. Unlike a pure paper-based system (registrants mailing or faxing their registrations to you), you and your staff are not "touching" each registrant as it comes in. This can create a problem if you have limitations on the size of events due to space or other factors. You can't rely on manually shutting down the registration form once you near the maximum, as you have no way of knowing or controlling how many people register within a short period of time, potentially pushing you over your limit.

Enable the maximum participants tool by entering a value in the **Max Number of Participants** field. Two additional fields will become visible—**Offer a Waitlist?** and **Message if Event is Full**. The second field is fairly obvious—if the maximum number of registrants has been reached, the registration form will be shut down and this message will be displayed to people who attempt to register.

The waitlist and administrator approval options make use of special participant status types that are disabled when CiviCRM is first installed. To use them, you need to configure the `ParticipantProcessor.php` script and a cron job to run it as described in *Chapter 3*, *Installation, Configuration, and Maintenance*, and then enable the following at **Administer** | **CiviEvent** | **Participant Statuses**: **On waitlist**, **Awaiting approval**, **Pending from waitlist**, **Pending from approval**, and **Rejected**.

The waitlist feature places people on a list in the order received, where they will be maintained until space opens up with the event. Available space may be the result of a new venue that accommodates more people (in other words, you increase the maximum number of participants), or due to existing registrants canceling, which opens up new spaces.

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In either case, registrants remain on the waitlist until space becomes available, at which point they are sent an e-mail inviting them to register. We will see one additional option impacting this process on the **Online Registration** form—the ability to define an expiration period for their **Pending** status. Let's review how the process works through an example:

1. While attempting to register, an individual is informed that the maximum number of registrants has been met.
2. The person chooses to go on the waitlist, and then enters his/her name and e-mail address.
3. After three days, your organization decides to move the event to a new venue that accommodates 10 more people. After altering the settings in the system, the first 10 people on the waitlist (first come first served) receive an e-mail, inviting them to register. CiviCRM automatically changes the status of their registration from **On waitlist** to **Pending from waitlist**. If they have not registered after the expiration period is over, then their registration status changes to **Expired**.
4. During the period when the status of these 10 registrations is **Pending from waitlist**, only those waitlisted contacts may register. New visitors to your website will not be able to register, as preference is given to waitlisted people. Waitlisted individuals beyond the first 10 (who were invited to register) remain on the list. As these waitlisted individuals respond to the invitation to register or allow the invitation window to expire, new people are invited to register (if there are additional individuals on the waitlist) or the registration form becomes publicly available.

While the assumption is that those 10 invited people on the waitlist will sign-up in a timely fashion, that's not always the reality of the situation. Some of those people may drag their feet or simply lose interest in the event. In either case, your ability to successfully fill the event to capacity and give fair opportunities to others on the waitlist to attend is compromised.

The expiration period option improves this by limiting the window of time during which places are held for waitlisted invitees to register for the event. We will review how to configure it in the **Online Registration** section. There are a few things to consider when using this feature:

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- Other sorts of pending registrations, that is, **Pending from pay later**, **Pending from incomplete transaction**, and **Pending from approval** also expire based on the same expiration period. "Pay later" transactions usually require a few weeks before a check is received in the mail, so your expiration period for "pay later" events may need to balance quite different lengths of appropriate periods. You may decide not to provide the option of paying later for events you expect will reach capacity. Alternatively, if you're monitoring the event carefully, you could initially enable "pay later", and then disable it when the initial capacity limit is reached.
- When you define the expiration time in the event settings, the cron job triggers the script that runs analysis on your records and determines if and when any e-mails should be distributed. If your cron job is configured to run nightly, expiration periods less than a couple of days may have undesirable effects, as the actual window during which the individual may register could be too short. Also be aware of the fact that many people do not get around to reading, never mind responding to, e-mails over the weekend. This leads to undesirable impacts on waitlisted users if you have an expiration period of less than 72 hours.

If you are new to CiviCRM but are interested in this functionality, it may be worth setting up a test event and running through the various scenarios with test records to understand how the behavior works.

After completing this form, click on **Continue/Save**. Now, click on the **Location** tab to proceed to the next step.

If you are creating a new event, notice that you are only given the option of continuing or canceling after filling out this form. After continuing, the full five-step tabbed interface appears and you may navigate between the form pages as desired. Note that you must save each page separately as you complete or edit it. For example, if you proceed to the second step and then want to return to the first tab, you must save the second form before proceeding to the first tab. In other words, the **Save** button only impacts the form you are on; it does not impact the other tabs. After the initial save, you will have the option of **Save**, which saves the information but keeps you in the event configuration form, **Save and Done**, which saves and returns you to the event management screen, and **Cancel**, which returns you to the event management screen without saving.

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Event Location

The second tab is used to enter the location of the event. Note that this is intended for the actual physical location of the event, and not the location of your organization. It will be included in the event information page, and if you've enabled mapping in the first step, it will include a Google or Yahoo! map.

Once you've created your first event and entered a location, that location will be available as a selection option for future events. At the top of the form will be an option to enter a new location or use an existing one. This is very useful if your organization uses various training or event locations on a regular basis. However, be aware that any changes to the location will affect all instances where that location is used.

You may enter one or more phone and e-mail address associated with the event. The person who answers at this number should be knowledgeable about the event, how to register for it, and how to get to it. In some cases, it may be a number in your organization, and at other times it might be a number associated with a venue. For example, the phone number might be the hotel's phone number where your convention is being held, and where attendees should call to make overnight accommodations.

The last field controls whether the event location should be visible on public-facing pages.

After entering the information, click on **Save** and advance to the next tab.

Fees

If your event requires payment of fees for people to attend, enable this option and begin completing the fields.

If you have set up a payment processor in your site to handle real-time credit card transactions, you may select the processor from the drop-down list. If you are not accepting credit card payments on your site, or do not wish to enable that for this specific event, you may still collect fees by clicking on **Enable Pay Later option?**. The idea behind "pay later" is to ask people to commit to payment, which will be made outside the real-time context of the registration process. For example, you might allow people to pay with check, to call and pay by credit card, or to pay onsite with cash.

"Pay later" may be used in conjunction with payment by credit card or each option may be used independently. However, if you have enabled fees for your event, you must have at least one option activated. If both credit card and "pay later" options are enabled, the registrant will be given the option of selecting "pay later", which hides and disables the credit card fields from the public-facing registration form.

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After enabling "pay later", you must complete two additional fields. **Pay Later Label** is the text to display beside the **Pay Later** checkbox on the registration form. **Pay Later Instructions** is a field that can contain a sentence or two of instructions on how to pay later. It will be included in both the thank-you page and the receipt sent to registrants. We recommend including in your instructions: who the check should be made out to, where the payment should be sent, and when it needs to be received. For example:

> *Payments should be made out to "FPAGM" and mailed to 123 Main St, Metropolis, ThisState, 12345. Payments must be received within 30 days or at the convention, whichever is earlier, or your registration may be cancelled without further notice.*

The **Contribution Type** field determines how the fees will be categorized when the contribution record is created. Your selection is used for the public-facing registration form and will set the default value for registrations created through the administrative interface. Enter a **Fee Label** to determine the text displayed on the public facing information and registration pages.

At this point, you must configure your fees. There are two ways to construct fee options—**Price Sets** or **Regular** (basic) **Fees**. The **Regular Fees** presents a basic list of fee options from which the registrant may select one option. **Price Sets** allow the construction of more complex series of options. A **Price Set** is a collection of fee fields which may include radio button options (user selects one from a list), checkbox options (user may select more than one from the list), select field (user selects one from a list), or a text field (user enters a quantity which is calculated against the configured per item rate to determine the total cost).

While **Price Sets** provide you with much more control and flexibility when constructing your fee options, there are two benefits only available when using the **Regular Fees**—the simplicity of the structure makes it easier to use (when searching and reporting on the events), and **Regular Fees** may have date-based discounts configured through the interface.

Let's review the **Regular Fees** with discounts first, then return to discuss the configuration of **Price Sets**.

Use the **Fee Label** and **Amount** columns to define your fee options. You may select one option to appear as the **Default**. Once you have your fees configured, click to enable **Discounts by Signup Date**. The date-based discount tool consists of one or more discount sets with associated fees. Because you can define multiple discount sets, you can create a tiered structure for your discounts. For example, let's say your event will take place on March 15. You might construct the following:

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- **Early Registration**: Now through January 15
- **Standard Registration**: January 16 to February 15
- **Late Registration**: February 16 to March 14

What we've defined as late registration will be entered as your **Regular Fee** options. You'll then create two discount sets which have the appropriate date ranges to handle the early and standard registration fees. After naming the discount sets and entering the date ranges, click on **Add Discount Set to Fee Table** to create those sets.

Once saved, two new fee option tables will be added to this form, pre-filled with the **Fee Labels** you defined in your **Regular Fees** grid. In most cases, your fee options will remain the same; only the fee amounts will change. However, you can restructure the discount fees as you wish. For example, you might have a preconference program registration that is only available for people who register before January 15, which you only add to the first discount set.

The end user visiting your site to register will only see the fees appropriate to the time in which they register. CiviCRM takes care of determining what options are listed, ensuring that you don't have people trying to register at the discount rate past the associated date window.

Coupon discounts

While not fully available through the interface, CiviCRM is "prepped" for handling coupon-type discounts. In this model, you disseminate a code to selected contacts, who may enter it into the event registration form in order to have a discount applied. Using this functionality requires implementation of some custom code, but is not beyond the grasp of a beginner programmer. For more information, see the blog post online outlining how to set this up at `http://civicrm.org/node/566`.

As just described, price sets allow more advanced options for configuring event fees. The one downside of using price sets is that they do not currently accommodate date-based discounting through the interface.

Price sets must be created in the price set management tool before assigning them to a specific event. While we are still on the event fee configuration page, note the message concerning price sets. If you already have at least one price set configured, a select box will display allowing you to select one. Doing so will hide the **Regular Fee** sections, as you must choose one system or the other when configuring fees.

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To construct a price set, visit **Events | New Price Set**, or **Manage Price Sets** to view the existing sets. Each set will consist of a series of fee fields. The set may be reused any number of times, so you may want the name to be general enough for use in multiple events. For example, if your organization holds a monthly breakfast seminar series with standard rates for each event, name your price set "Monthly Seminar Fees" rather than "March, 2011 Seminar". Be sure to indicate that the price set will be used for events.

The price set functionality may be used for both events and contribution pages. In the context of a contribution page, it allows you to have different levels and types of donation options.

Each fee field will use one of the following display/format types:

- **Text/Numeric quantity**: The registrant is given a text field where they enter a quantity value. The unit price is set by you and the total is calculated during the registration process. You might use this when selling banquet tickets at a conference where registrants may invite their spouse or colleagues to attend.
- **Select**: List of options displayed in a select form field.
- **Radio**: List of options displayed in a list of radio buttons where the user may only select one option.
- **Checkbox**: List of options displayed in a list of checkboxes where the user may select/unselect any of the available choices.

For each field, you may choose if the fee amounts are visible and whether the field is required. The required field option means the registrant must select an option from this one field. It does not impact how this field relates to other fields. Radio and checkbox type of fields will have an additional option where you indicate how many options should be displayed on a single line.

You may optionally allow a price set field to impact the total registrant count calculated by CiviCRM to ensure that the maximum number of participants for the event has not been exceeded. For example, let's say one of your fee options is a checkbox indicating that the registrant will bring his or her spouse. You are not charging the full registration fee if a spouse attends, which is why it is handled as a fee option for the main registrant. However, your event space has a firm capacity limit of 250 people and you need to make sure any spouses attending do not cause you to exceed that limit. You enter 250 in the **Max Participants** field (step 1 of the event creation wizard) and enter **1** in the **Participant Count** field. If a registrant selects this option, a count of **2** will be logged against the max participant value (one for the registrant, one for the spouse). This functionality is also useful if you are selling bulk options, such as the ability to purchase a table (seating eight people) at a banquet.

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Version 3.3 extends the max participant concept to price set field options, which can be used for managing session attendance. For example, you might create a price set field called "Afternoon Breakout Sessions" with three options. Each of these breakout sessions will be in different rooms, with different space capacity. You can set a maximum value for each option, and thereby control how many people sign up for each session.

Toward the end of this form is the option to make the field publicly visible or admin only. As the option suggests, a publicly visible field will appear on your public-facing registration form, while an admin-only field will only appear when you are registering people through the backend administrative tools. An admin-only field may be useful for structuring discount rates that only administrative staff may apply, or for registering speakers and guests for which special rates are available.

Price set fields may be configured using a negative value which could be used to allow discounting options. For example, your organization may offer a $25 discount if people agree to arrive an hour early and provide volunteer assistance with the event setup.

The image below displays a price set that contains two fields—radio buttons for the registration fee (required) and a $10 discount for FPAGM members:

After configuring all your fields and saving them, you can return to your event configuration and select the price set for use in your event. Save the form and continue to the next tab to proceed with your event setup.

Online Registration

Online Registration is where the power of CiviCRM is realized in the event management realm. No longer do you need to rely solely on processing paper-based registrations or to migrate data from a third-party event registration system into your contact database. Everything happens in real-time, directly integrated with your constituent management software. As people register for the event, you see current statistics at any given point of time summarizing attendees by status and role.

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The first few fields in this page control various options for how the form functions. After entering the text for how the registration form should be labeled when accessed from the event's information page, you specify the time period when the form will be available. You may, for example, want to cut off online registration a few days prior to the event in order to calculate total registrants, finalize numbers with your caterer, and begin preparing attendee packets. Once the end date has passed, site visitors who try to access the registration form will be redirected back to the event information page with a notice informing them that registration is closed.

The next two fields control multi-registrant capabilities. When **Register multiple participants?** is enabled, registrants will have the option of indicating a number of people besides themselves that they wish to register. Based on the number indicated, they will be given a separate form to complete for each registrant. The confirmation page will detail each registrant and the total amount charged will reflect all registrants. This is particularly useful for organizations whose constituents consist of businesses that may send multiple people to a conference, exhibit show, or a political party that allows a certain number of delegates from each region to attend a convention. The second of these options makes the e-mail field on the additional registrant forms optional (by default, each registrant must have a unique e-mail address).

Require participant approval? is used if you want the administrative staff to review registrants before they are allowed to complete their registration and pay. Enabling this will mark each registrant as pending approval in the participant status field and exposes an approval message field where you provide guidance to the registrant regarding this function.

Before using the participant approval functionality you need to enable the **Awaiting approval**, **Pending from approval**, and **Rejected** statuses at **Administer** | **CiviEvent** | **Participant Statuses**, and configure the `ParticipantProcessor.php` cron job, as described in the *Waitlisting* section.

If you are using either the waitlist or approval functionality, you may optionally configure a **Pending participant expiration (hours)** duration, as reviewed earlier. This value determines how long approved/accepted waitlisted registrants are given to complete their registration after CiviCRM sends them an e-mail inviting them to register. For more discussion on this functionality, refer to the *Waitlisting* section.

The rest of this form handles the page titles and text that will be displayed on each of the three steps of the registration process—the registration form, confirmation page, and the thank you page. Note that the registration form section has the ability to include a profile on the top and/or the bottom of the registration form.

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A **profile** is a collection of fields, both basic system fields (first name, last name, and so on) and custom fields that you have configured in the system. A standard event registration form with no profile configured will only include the event fees and e-mail address fields. That is the minimum requirement of CiviCRM to complete a registration. However, in almost every case, you will want to collect additional fields for the registrant, including name, address, phone, fax, and perhaps some options specific to the event (meal choice, special needs, session attendance, and so on). These will need to be gathered together in one or two profiles and included in your form.

If you have enabled multiple-registrant capability, you have the option of selecting a different set of profiles for use with the additional registrants. Let's say you are hosting an exhibit show in which businesses frequently send multiple representatives. Your first registrant form should include details about the exhibit display, such as display size, special needs (such as electricity), and preferred location. However, you only need the name and contact information for all subsequent registrants. So you create a profile for the first registrant, which contains the exhibit-related details, and another for all additional registrants containing the name and contact information.

Profiles are an important part of the event registration tool. If you are not familiar with how they are used, please refer to *Chapter 5, Collecting, Organizing, and Importing Data* for a full discussion of how they are configured. Also review the *Custom data* section in that chapter, taking particular note of the different ways in which custom fields for event participants can be created. For example, you can create custom participant fields that are role-specific, event type-specific, event-specific, or available for participants in all events. Keep in mind that the creation of a custom field does not itself impact whether it's visible in your registration form; you must also add the desired fields to the profile that will be used in your form.

Another consideration you should review in relation to profiles is how CiviCRM interacts with contact records as people register for events. When unauthenticated people register for events (that is, they have not logged in to the site but are anonymous users at the time they complete the form), CiviCRM will attempt to match them to existing contacts in the system using the default strict **Individual** rule defined in **Contacts | Find and Merge Duplicate Contacts**. Be sure to review that rule to ensure that it is sufficient for your purposes.

Consequently, make sure that the fields in the default strict **Individual** rule are included in your profile or you may find more duplicates created than desired. For example, if your rule matches the first name, last name, and e-mail address, but you do not assign a profile that includes the first and last name, every registrant will be entered as a new contact, as there will be insufficient data to ensure a reliable match.

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Of course, you could require your users to log in to the site in order to register for your event. Doing so would ensure that you're always interacting with the right contact record. However, your organization model and website structure may not support that option, and requiring that people log in before registering will inevitably result in some abandoned registrations.

The final section in this form controls e-mail-based confirmation and receipting. When registrants complete the form, you generally want them to receive an e-mail confirming that they are registered, detailing the options they selected, and serving as their payment receipt for paid events. In this section, you may add an event-specific message that will appear at the top of the e-mail, specify who the e-mail is from (name and e-mail), and indicate whether it should be CC/BCCed to anyone (such as your event director on staff).

The event and receipt-related fields are inserted by CiviCRM and may be configured through **Administer** | **Configure** | **Message Templates**. Note that several event-related templates exist there by default. The one impacting the online registration form is titled **Events - Registration Confirmation and Receipt (on-line)**. Depending on what options you selected, other templates may be used as well. In general, the default templates are basic but sufficient, laying out the fields in a table grid format.

After completing the configuration of this form, click on **Save** and advance to the final tab by clicking on **Tell a Friend**.

Tell a Friend

The final tab enables a social networking feature, providing tools for registrants to tell others about your organization and event. When enabled, registrants will be given a button on the event **Thank You** page, inviting them to share the event with others. The button directs them to a form where they may customize a default message and enter the names and e-mail addresses of those they wish to invite (up to three people).

You configure the page title, message given to registrants on the **Thank You** page encouraging them to tell others, the suggested (default) message that registrants may then customize, and the link provided to recipients. Typically, you will direct people to the event information or registration page, but you have the flexibility to send them anywhere.

After registrants complete the **Tell a Friend** form, they will be directed to a **Thank You** page that you can configure, as desired in the last two fields on this form.

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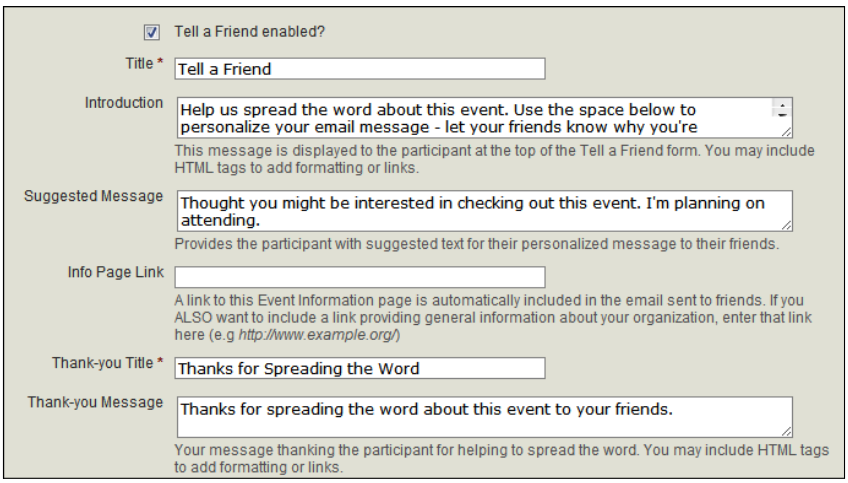
Click on **Save** or **Save and Done** to complete the event configuration. The following screenshot shows the options presented in the **Tell a Friend** configuration:


Tell a Friend enabled?
Title *
Tell a Friend
Introduction
Help us spread the word about this event. Use the space below to personalize your email message - let your friends know why you're
This message is displayed to the participant at the top of the Tell a Friend form. You may include HTML tags to add formatting or links.
Suggested Message
Thought you might be interested in checking out this event. I'm planning on attending.
Provides the participant with suggested text for their personalized message to their friends.
Info Page Link
A link to this Event Information page is automatically included in the email sent to friends. If you ALSO want to include a link providing general information about your organization, enter that link here (e.g http://www.example.org/)
Thank-you Title *
Thanks for Spreading the Word
Thank-you Message
Thanks for spreading the word about this event to your friends.
Your message thanking the participant for helping to spread the word. You may include HTML tags to add formatting or links.

Testing and promoting

At this point, your event is configured and ready to go. The next and very important step is to test your registration form. This is particularly important when you are working with events for the first time and are not fully familiar with the various features. Test the information page and registration form; make sure you are comfortable with how the fees and fields are structured, and how messages are displayed in each step of the process. Be sure to walk through a complete registration so that you can receive and review the receipt e-mail. If you have both credit card and pay later options enabled, exercise both workflows to ensure that you have crafted your text appropriately for all pages and e-mails.

To access event-related links for testing and promotion, use the **Event Links** button from within the event configuration form or the pop-up link in the **Event Management** listing. There are three link options you will review:

- **Event Info**: Displays the live information page about the event.
- **Registration (test-drive)**: Displays the registration form in test drive mode. Test drive mode will not actually process a credit card and the registration will be flagged as a test record for exclusion in your registrant counts.

While searching for test registrations at **Events | Find Participants**, you might be confused if your test transactions don't show up. Make sure you check **Find Test Participants?** to explicitly include test registrations in the result list.

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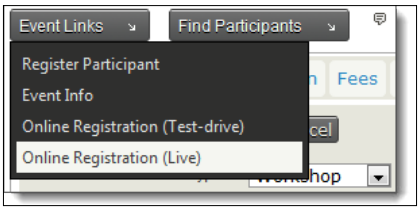
- **Registration (live)**: Displays the live registration form:



Although CiviCRM does provide a test-drive option, we recommend testing with the live registration link until you are comfortable with the configuration options. You may want to temporarily add a small-value registration fee option for live testing with a credit card in order to avoid the cost of issuing a refund.

The live links above (**Event Info** and **Registration (live)**) can be used in your website content, e-mails, and other promotional methods. Joomla! users may also construct links to these pages through the creation of a CiviCRM menu item.

In addition to direct links to your event pages, you may want to provide access to lists of upcoming events. There are several ways to do that using native CiviCRM methods. From the **Manage Events** page, you will find four icons in the top-right region of the **Find Events** block:

- HTML listing of events
- RSS feed of events
- iCalendar file download of events
- iCalendar feed of events

Each link publishes a list of current and future events that are designated as public. Recall that in the first page of the event setup process, we had the option of setting an event as public; the primary use of that function is to control what appears in these listing pages.

CiviCRM provides Drupal with a block to display events. You can enable it within a Drupal theme at **Site Building** | **Blocks** | **List** | **ThemeName** by specifying a region for the **CiviCRM Upcoming Events** block and clicking **Save blocks**. Additional configuration options for **Link name to display** and **Max number of events to display** are available by downloading and enabling the CiviCRM Event Block module from `http://drupal.org/project/civicrm_eventblock`.

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Advanced Drupal users interested in more control over the formatting and display of CiviCRM Event information within Drupal should use **Views**. **Views** provides extensive customization of how you display event information on pages, blocks, and feeds. In Drupal, click on **Site building | Views | Add**, provide a **View name**, select **CiviCRM Events** as the **View type**, and click **Next**. You can see the CiviCRM Events fields available for display by clicking on the "plus" sign beside **Fields**, and then selecting **CiviCRM Events** in the **Groups** selector. For more information on using views, refer to **Advanced Help** on your site, or use a good Drupal book on the topic.

An events listing module is also available for Joomla! at the CiviCRM website and Joomla! Extension Directory at `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviEvent+Joomla+Module`. The module has numerous options for controlling what is displayed in the list of events, including whether it links to the information page or registration page, whether a **Register now** link is included, the event summary, and how you want the list filtered (event type, date range, all current/future, specific events, and so on). For Joomla! users, this presents many useful options for promoting your events.

Now that you've constructed your event and tested it, get out there and tell people about it!

Breakfast seminar example

One of FPAGM's goals for the year is to provide more training resources for food pantries in the region. Many of these pantries are volunteer-run and managed by churches, community organizations, and other small local groups who are seeking to support their neighborhood. To achieve this goal, they have constructed a series of breakfast workshops where volunteers and pantry workers can come together and discuss a predefined topic. FPAGM will invite speakers to facilitate the discussion around topics such as financial management, volunteer solicitation and coordination, food storage and distribution, and support resources for clients.

Each breakfast seminar will charge a nominal fee to cover the cost of the food provided. FPAGM would like all registrations to go through the website (no mail or phone-based registrations), though they will enable the "pay later" option for people who wish to pay by cash on-site.

Since they anticipate hosting other types of events, they begin by creating a "Breakfast Seminar" event type to categorize these monthly meetings. They also construct an event template, as each of these meetings will be nearly identical. Since the fee structure is very basic and the template will replicate from one event to the next, they choose not to construct a price set. They will offer two basic fee options: standard and supporter. The standard fee will cover the cost of the breakfast and incidentals associated with hosting the event, while supporter will add an additional amount as a way of encouraging people to go beyond the basic cost and help support the association.

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Space is limited, as the meetings will take place in the association's conference room that holds about 30 people. FPAGM sets a max participants value and enables the waitlisting features. They also include a profile to capture basic details such as the individual's name, organization name, and phone number. They choose not to enable the multi-participant option, as they prefer each person signing up on their own. Once complete, they promote the events through blog-style announcements and provide direct links to the registration form.

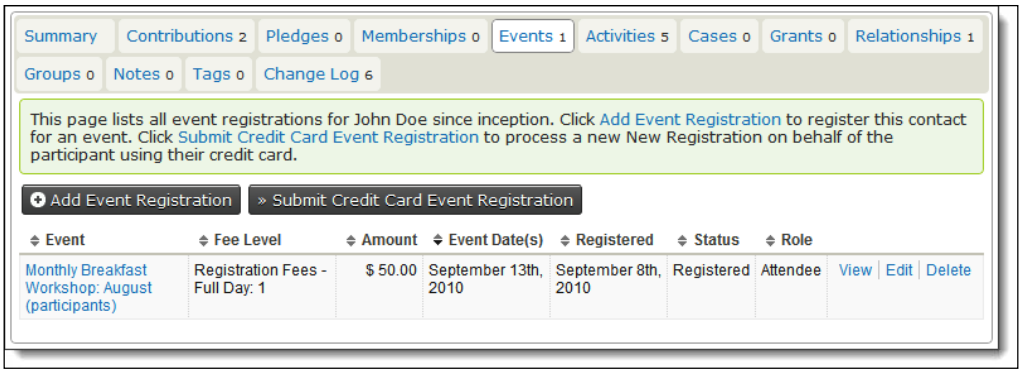
Processing and managing participants

You've configured your event, tested it, and publicly promoted the online information page and registration form. Before you know it, event registrations start rolling in. Now what?

As with so many other areas of CiviCRM, these records may be viewed collectively through search tools or on an individual-contact basis. In this section, we'll walk through the event registration as it is viewed through the contact's record and then briefly review importing participant records.

Working with event registrations

A contact's history of event attendance will appear in their **Events** tab. From this tab, you can view, edit, or delete an existing registration, or create a new registration for the contact.



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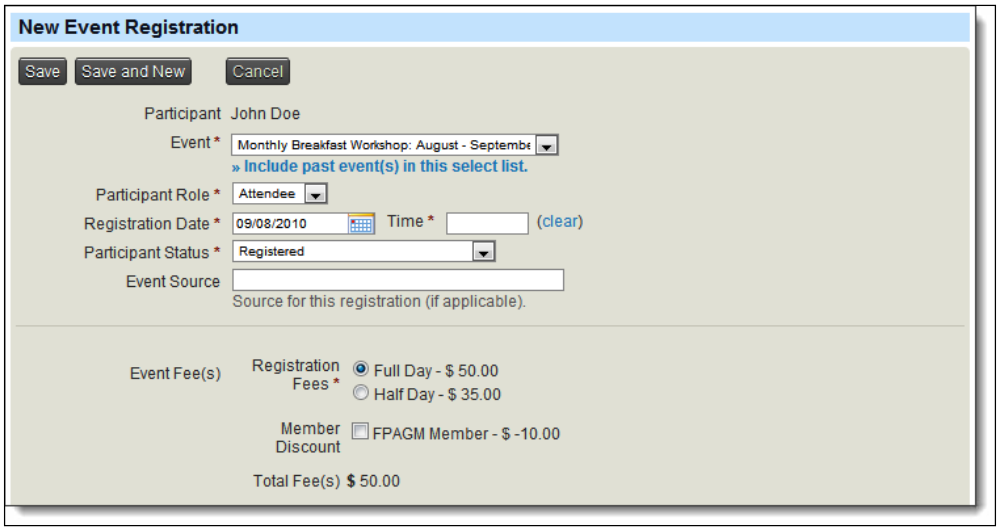
Notice that there are two buttons above the event history listing, namely, **Add Event Registration** and **Submit Credit Card Event Registration**. The first is used for registrations that do not involve real time credit card processing through the system. This may include free events, payments by check, cash, EFT, or a credit card that was processed outside of the system. The second button should be used if you will be processing a credit card directly through CiviCRM. If you have not configured a payment processor, or your payment processor does not handle integrated payments (for example, PayPal Standard or Google Checkout, which redirect you to an external site to process the payment), then that button will not be visible.

The new registration form allows you to select the event you wish to register the individual for, the fees and fields specific to the event, payment options, and receipting options. The following screenshot shows the top half of the form:



There are several things to note about this form:

- The event drop-down list will only show current and future events. If you wish to register someone for an event in the past, you must click the **Include past event(s) in this select list** link, which will reload the form with the full list of events. This is done to reduce any confusion and simplify the event selection process.

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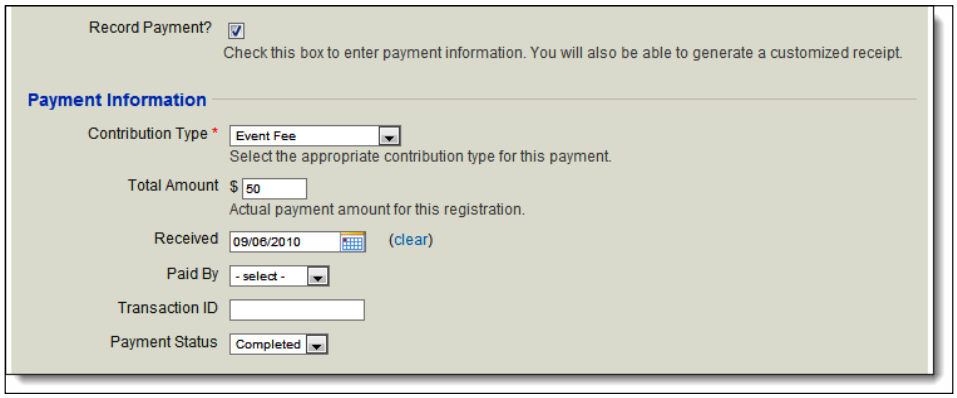
- If you have created any custom data fields attached to participants, they will appear and be available only when the selections match their "used for" criteria. For example, if you have created custom fields for the participant role **Guest**, they will only appear when you change the role on this form. If you have custom fields attached to the event type **Conference**, they will only appear if the event selected is associated with that event type. If you are expecting, but not seeing a certain custom field, make sure your selections match how that field is configured to be used.

Directly below the event fee block is an option to record a payment with this registration. Checking the box reveals a series of contribution-related fields, as shown in the following screenshot:



It is important to understand that an event registration in which fees are collected involves both an event participant record and an associated contribution record. While you could process these separately, we strongly advise that you manage them through this single interface. In addition to being easier than entering them separately (since you may handle both records at once), doing so creates a link between the two records. If you return at a later date to view this event registration, you will see the related contribution record summarized below it. Likewise, if you enter the associated contribution record, you will see the event record summarized below it. Revenue totals for the event in reports will also reflect the linked records. Entering them separately will not build that connection.

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Handling expected payments

Inevitably, you will receive event registrations by mail, fax, or phone, in which payment has not been submitted with the event registration. Though you have not actually received the payment, there is an *expected* payment and consequently, the best practice is to enter the payment as a **pending** contribution. Use the **Record Payment** option to log the contribution, but do not complete the **Paid By** field, and change the **Payment Status** field to **Pending**.

Why is this recommended? For two reasons: first, it captures the reality of the data better. You have received a registration that implies a commitment to pay. This is different from a registration for a guest, speaker, or other VIP attendee for whom you do not plan to charge a fee. Secondly, it provides better tools for tracking payments due. If each registrant in the above scenario has a pending contribution payment, you can easily run a search to find out the total due and process invoices or follow-up communication accordingly. In essence, it gives you a better overview of your actual financial position, and a clear data path to those who owe you payment.

Registrations received through your public-facing event registration page will also have both an event and contribution record created. Pay later registrations will have contribution records with a status of **Pending**, indicating that a payment has not yet been received. When you receive payment, first record the details in the contribution record and change the status to **Completed**. Doing so will automatically change the status of the associated event registration record to reflect that the payment has been received. Note that the reverse action does not have the same effect: changing the status of a *registration* to completed does not likewise change the status of its associated *contribution* record. This supports situations where you want to allow people to attend the event (marked completed) even though they will pay after the event (marked pending).

Before leaving the event record displayed within the contact record, we want to point out one additional feature. From the event tab, click on **View** to see the registration details. From this screen, you'll notice a button to create a name badge. Clicking on this option will direct you to a form where you select the template to be used and trigger the creation of a PDF file with the name badge.

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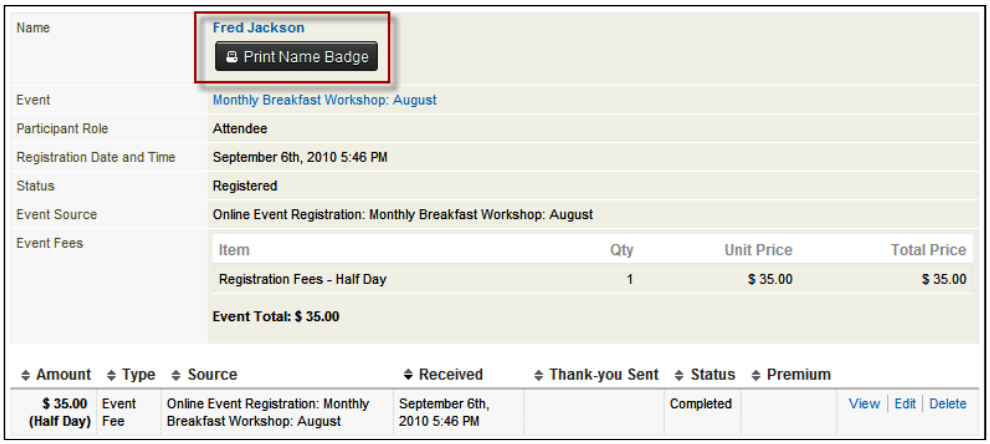

In the following *Tracking, searching, and reporting* section, we will review how to create name badges for all event participants in bulk. For now, it's useful to see how an individual name badge can be created.

Importing participant records

As with other areas of CiviCRM, the event functions include a tool for importing event registrations. This is particularly useful when you are initially migrating data from an external database such as MS Access or MS SQL Server. It may come in handy at times depending on your organization structure and how CiviCRM is being used.

Let's say your organization consists of five chapters geographically oriented to cover the entire state. Each chapter hosts local events and handles all onsite management through volunteers. The registration process is centralized through the state-wide organization using CiviCRM, so the contact participant list is generated and e-mailed to the chapter coordinator the day before the event.

Suppose some of these events allow walk-in registrations and others include continuing education credits that must have verified attendance in order to be earned. In other words, the organization must not only track if people have registered, but must also track whether they actually attended.

You choose to handle this by sending a `.csv` (comma-separated) export file the evening before the event to the chapter coordinator. The coordinator welcomes people as they arrive at the event and uses spreadsheet software to mark each person who attends in the `.csv` file. They add new rows for walk-ins. That file is sent back to the main office at the conclusion of the event and is imported into CiviCRM in two steps: existing registrants are imported using the **Update** option, where the participant status value reflects who attended; and the new registrants are imported using the **Insert** option, and then are matched with existing records using their name and e-mail.

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The import tool is very similar to what we saw in other areas. The four-step wizard consists of loading a file and configuring the import settings, mapping the file's fields to CiviCRM fields, previewing the results, and completing the import. An error file will be generated and will be available for download if any problems are discovered with any records.

To access the import tool, visit **Events** | **Import Participants**. There are a few things to note that are specific to importing events:

- Participant import only accepts `.csv` files. You cannot connect to a MySQL database as with the contact import.
- The most significant difference between importing participants and importing contacts is the behavior of the **Update** option for handling duplicates. The Update option *requires* the presence of an existing participant record, which *must* be identified using the unique participant ID value. Consequently, you will only use it in scenarios similar to the one we just discussed, where the participant list is exported from the system, changes are made, and it is then imported back into the system. If the **Update** option is used, CiviCRM will not process new registration records. In this way, it differs from the contact import that matches and updates existing records *and* creates new records for those that do not match.
- As one might expect, the field mapping options available for the participant import include a number of registration-related fields. Take note of those in red, as they are required in order to successfully import these records. They include the Event ID and Participant Status. The former can be obtained from the **Manage Events** page. Several of the fields highlighted in red are used for matching to the contact record. Not all of these are required; only ones sufficient for making a valid match are required. For example, you do not need the internal contact ID and the first/last name. Either of these is sufficient for making a match.

Tracking, searching, and reporting

In the last section, we worked with an individual contact record to see how the registration is created with an associated contribution record. In this section, we will begin working with multiple participant records.

Tracking registrations using the dashboard

One of the most important things for you as an event manager is the ability to quickly see how many people have registered for a given event. CiviCRM provides you with a snapshot to these details on the **Events** | **Dashboard** page.

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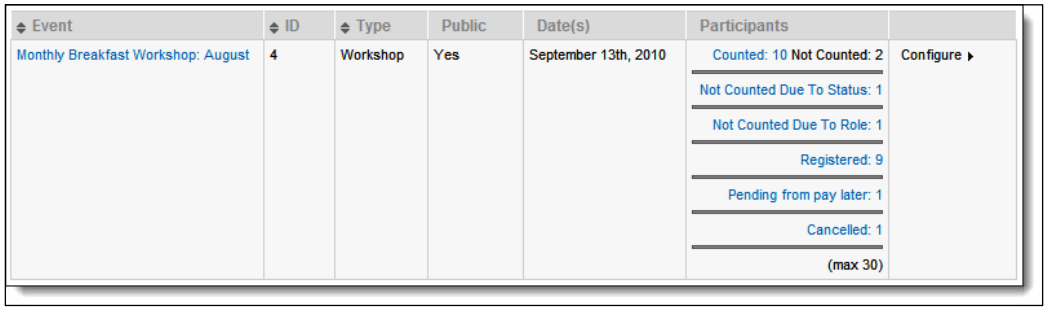
Similar to other areas of CiviCRM, the **Dashboard** provides a snapshot into key data in a summarized fashion. For events, this consists of a listing of upcoming events with registrant counts broken down into various categories, and a list of recent registrations received.

The registrant counts are very useful and bear some explanation. Review the following screenshot:



CiviCRM helps you *understand* your participant records by breaking them down into categories. We begin with the number of **Counted** registrants, in contrast to those **Not Counted**. Counted participants include those who have registered, including both those who have paid and those who will pay later. **Not Counted** is broken up by status and role. By default, registrants with a status of **no-show**, **cancelled**, **pending from incomplete transaction**, **on waitlist**, **rejected**, and **expired**, will all be excluded from the registrant count. Why? This is because they are not expected to attend or are confirmed to not have attended. In a similar way, participant roles may be configured to be included or excluded from the total counts. In the example we saw earlier, we had created a participant role entitled "Staff" which should not be included in the count.

Settings for the participant statuses and roles can be configured through **Administer | CiviEvent**, and were discussed earlier in this chapter. What we see in this section is the impact of those settings and how they are used to help you understand the nature of your participants.

The **Registered**, **Pending from Pay Later**, and **Cancelled** counts you see in the screenshot reflect the various participant statuses represented by the records. If other statuses were present, they would be listed as well.

Note that each of these counts is a live hyperlink; selecting the link displays the relevant registrants in that count. This is, by far, the fastest way to view and work with a segment of your participant records.

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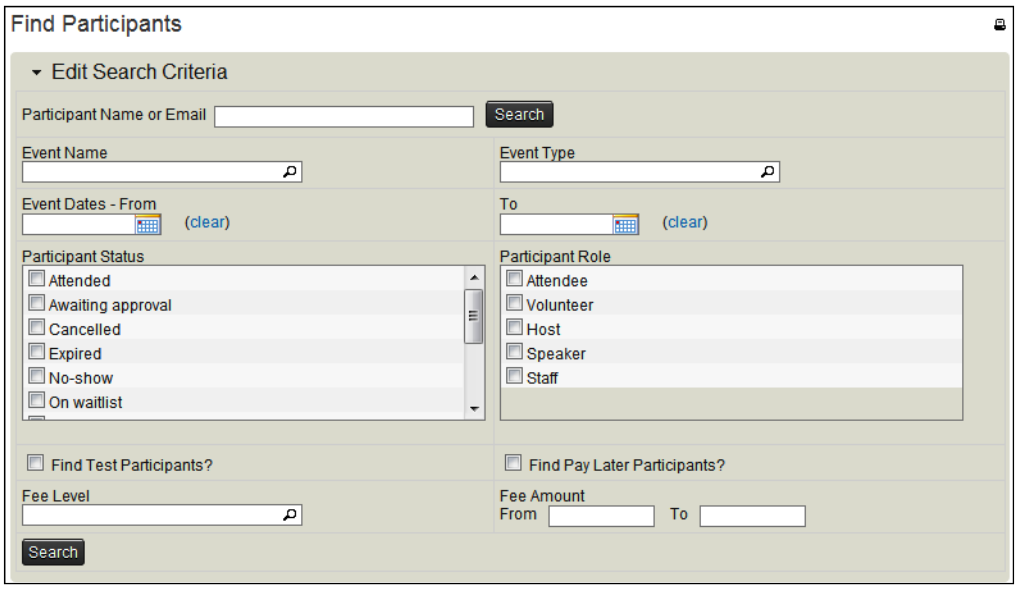
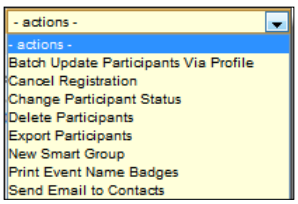
Searching for participants

While the dashboard provides a quick window into a single event, you will undoubtedly want to search for records based on more refined criteria or across multiple events. We do this through **Events** | **Find Participants**, as shown in the following screenshot:



The fields available through this tool are fairly self-explanatory. You have options to search within a single event, across multiple events within an event type category, by date ranges, or fee ranges. The search fields are restrictive; all criteria must be matched in order to return results. Entering a large number of criteria will result in a smaller number of records returned. The two exceptions are the multi-select fields, **Participant Status**, and **Participant Role**. Multiple selections within that field are inclusive, though its interaction with other fields remains restrictive.

Similar to CiviCRM's other search tools, you may take action on bulk records after running a search. First select all records or choose selected records and then initiate your action from the drop-down menu.



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Most of these are standard options we will not review. Take note of the **Change Participant Status** option, which is unique to events, and the **Print Event Name Badges** option. You will use the latter to generate bulk name badges and follows steps similar to what was noted earlier—you select the format for your name badges, and then trigger the creation of a `PDF` file, which can be used for printing.

Recall that component searches will retrieve the associated related records, and not the contact records, in their results. This means that a single contact may be duplicated if they have multiple event registrations matching the selected criteria. Further, the export tool provides options for including details about the related records; in this case, the participant details, as that is the "lens" through which the data is retrieved.

Though this search tool will generally fill most of your needs for isolating records, you may find one particular area where it falls short, namely, the handling of price set fields. Price set fees are tricky because they result in a series of sub-fields associated with a single registration record. When searching and exporting registrations, it becomes difficult to effectively search on and export that data within the context of this form.

To overcome this, CiviCRM ships with a custom search that will break down your event by price set fields. To access it, visit **Search...** | **Custom Searches…**. Click on the **Custom Searches...** menu item to view the full list of available tools (the submenu only includes a small selection of available tools). From this list, choose **Price Set Details for Event Participants**. Select an event and trigger the search to return a grid-based breakdown of participants by their price set fees.

A second custom search may also be of value: **Event Aggregate**. This search displays registration fee summary calculations for events. More robust reporting tools that we will review shortly may prove more useful as this report is somewhat limited.

Event reports

Before wrapping up our discussion of event functionality, let's look at how the reporting tools can help you share the story of your event's success. Though a full discussion of reporting tools is covered later in this book (*Chapter 12*, *Telling Your Story: Building Reports*), we will briefly review the three event-specific reports available to you.

CiviCRM ships with four reports that involve event records, two of which are based on the same report template. From the **Reports** menu, they are as follows:

- **Event Participant Report (List)**
- **Event Income Report (Summary)**

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- **Event Income Report (Detail)**
- **Attendee List**

The **Event Participant Report** and **Attendee List** are both based on the same template and basically provide options for retrieving registrants based on the role, status, event(s), event type, or date range. It is great for generating a list of attendees for staff to keep on hand during the event, or to publish an attendee list for distribution to attendees. One of the unique things about this report is that you can include blank columns before or after the data columns. This could be used to track attendance by checking off registrants on the list as they check-in to the event or to collect other information to be imported later.

The **Event Income Report (Summary)** displays event income details and breaks out the participant status categories in the event. Using this report, you gain a sense of how your registrants versus cancelled or other non-counted statuses may have impacted your net income.

Event Income Report (Detail) generates a detailed breakdown of all major categories of the event, including statuses and roles, and generates counts and income totals for each line. It provides an excellent "final report" tool for your event file.

Integrating events into your CRM strategy

One of the challenges of writing a book about software like CiviCRM is that it's really easy to remain modularized – and consequently, it would be easy for you to approach the software in a purely modularized way. That's fine to a large extent; you will naturally think and be structured around these blocks of functionality such as events, members, donations, case management, and so on. However, every so often, it's good to think outside of those modularized "boxes" and push beyond to realize the full potential of the software.

You've created an event, published the registration form, collected registrations, pulled your attendance list, printed name badges, and presented a report to your Board of Directors. In short, you've experienced a successful event management process.

But what have you done to invite attendees to take further action? Have you encouraged them to become involved in a committee, sign up for an e-newsletter, or join the organization as a member?

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As you construct your event and prepare to publish it, think about what fields you should collect information on that don't necessarily have direct impact on the event. For example, you could include your newsletter signup option in the registration form; you could provide a checkbox list of interest areas to learn more about your event participants and why they are attending; or you could ask if they are interested in learning new ways to support the organization through monetary donations or volunteer service opportunities.

Do you ask people if this is the first time they are attending your conference or exhibit show, and if so, would they be interested in participating in a first-timers dinner? Remember that events provide a unique opportunity for people to see the "face" of your organization. Use that opportunity to build commitment among those new to the organization.

After your event, you have a fresh list of people who are clearly interested and engaged enough to attend your conference, meeting, workshop, seminar, training, and so on. While a high percentage of these contacts were likely already in your system, some are inevitably new and merit additional follow up. Do you send a conference evaluation survey following the event in which you invite people to provide feedback and input for use in future events? This could be done with a CiviCRM profile, enabling you to retain the response directly within the individual's record (assuming you don't need to offer the option to respond anonymously).

The tools to achieve these calls for action and commitment are at your fingertips: use membership tools to encourage people to join; link to donation pages from the event registration "thank you" page to solicit monetary support; expand the information you collect in the event registration profile to learn more about your constituents and their areas of interest; and harness the power of CiviCRM's broadcast e-mail capabilities to promote and follow-up with your registrants.

Go beyond just event management tools to other CiviCRM capabilities in order to broaden and deepen your organization's relationship with event participants.

Summary

For many organizations, events are the only opportunity that constituents have to see the "face" of your organization. How you manage your event and what tools you have to effectively track and report on the success of the event will ultimately impact your bottom line. CiviCRM provides tremendous tools for generating both simple and complex structures and managing registrants through every phase of the project.

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In this chapter, we have:

- Walked through the configuration of events and discussed in detail the many options available
- Reviewed how an event registration impacts the contact record
- Registered a contact administratively and understood best practices when working within the backend environment
- Discovered how CiviCRM calculates participant counts and how these can be effectively used to track registration progress
- Ran searches for participants and took bulk action on the resulting records
- Generated reports to summarize event income details and produce attendee lists

In the next chapter, we'll turn attention to CiviCRM's case management tools and explore how you can track communications with constituents as you work toward case resolution.

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10
Interacting with Constituents: Managing Cases

We now come to a chapter which may not appear at first glance to apply to many not-for-profit organizations. The concept of "case management" is often used with reference to human service agencies such as those within the health care industry. That is, in fact, where the original functionality of CiviCRM's case tools was born.

However, the concept of case management extends to many other industries and organizations as well. In essence, it is the management of a multi-step process surrounding a single theme, issue, or project.

In this chapter we will:

- Thinking through your case management system
- Configuring cases
- Tracking, managing, and resolving cases

Even if you do not initially think CiviCRM's case management tools are something you would need to use in your organization, consider reviewing this chapter to better understand the core concepts and potential use cases. You may be surprised by the possibilities case tools offer.

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Thinking through your case management system

As with other areas of CiviCRM, your implementation of the case tools begins with planning. In fact, the planning and configuration step is absolutely essential for working with cases. Unlike other components within CiviCRM which you may begin working with out-of-the-box with minimal initial planning, the case tools require construction of a configuration file which must be present in your system in order to use the tools.

Before we dig into that process, let's take a step back and understand what case management is and how it differs from activity records.

In the opening section, we described a case as the management of a multi-step process surrounding a single theme, issue, or project. In essence, a case is a container for activities and relationships—a mini CRM within CiviCRM. Each case surrounds a single theme, issue, or project attached to one or more constituents. Within this "container", we track **case activities** (our multi-step processes), **roles**, and **relationships**. By grouping these various pieces of data in a case record, we can keep apart from the rest of the contact's information. This isolation simply helps us track the conversations and key people involved in each issue or project.

In addition, the case tools allow us to build **time-based workflows** into the issue resolution process. These timelines are constructed to ensure that the staff involved in the resolution adheres to your response-time policies and procedures.

If everything described here sounds like a foreign language to you, consider this summary of key case functionalities:

- **Cases group activities**: If you are interacting with a constituent about an issue and find that you have multiple phone calls, documents transferred, meetings, and so on, a case can collect them into a single convenient container.
- **Cases may define workflows**: If you have well-defined multi-step processes and want to regulate those steps, case tools can define each step and assign due dates.
- **Cases may define roles**: If you have multiple staff assigned to projects along functional lines, or you need to better manage the roles and projects to which particular staff are assigned, case tools can help you define and assign roles more effectively.

So what's the difference between cases and activities? Why would I build a case when I can track multiple activities in a constituent's record and assign them to my staff as needed?

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The two tools are very similar. In fact, the primary make-up of a case record is the ongoing series of case activities. However, while a contact's basic list of activities will grow and be created from multiple sources (both manually created activities and auto-generated ones), the case record will help manage multiple pieces of communication surrounding a common topic by grouping them together. In this sense, think of a case as an upgraded activity.

Cases don't replace activities. You will still have periodic general communications to and from constituents that you track as activities directly on their contact record. However, if your relationship with a constituent surrounding a single issue, problem, project, or other matter begins to involve multiple steps, multiple pieces of communication, or multiple people in distinct roles, then it's time to upgrade to a case.

Making it real

If you're still struggling to see the potential application to your organization, consider the following use cases:

- **Human services/service delivery**: This is where the case tools were first born, and is the most obvious application. If you interact with constituents by helping them resolve issues (as a counselor, consultant, or advocate) or providing direct support to them (onsite care, delivery services, transportation, and so on), you may manage these service and support requests/tickets with a case.
- **Membership/affiliation processes**: If your membership or affiliation application process involves multiple steps in which the applicant must complete forms and interviews, provide supporting documentation, and go through a formal approval process, you could manage those steps in a case. While the case record won't directly connect to the membership records, the process and record-keeping involved with the application and approval could be handled here.
- **Donor courting**: While low-end donors may simply have a one-touch relationship with your organization through a contribution page, high-end donors typically involve a longer "courting" process where key leaders in the organization will meet the donor, discuss specific needs, and perhaps negotiate the recognition that will be received for donation or sponsorship. The ongoing communication surrounding a specific donation or sponsorship solicitation could be grouped in a case record.
- **Grant application**: CiviCRM's built-in grant tools are geared toward organizations disseminating grants and managing communication with grantees. However, if your organization regularly *applies* for grants, you could construct a case type to manage that process, including grant writing, internal review, application submission, response, report tracking, and payment schedule.

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These examples are just a few ways in which CiviCRM's case management tools are currently being used and may stimulate your thinking to find ways in which it could be used in your organization.

However, are there times when a case record should not be used? Perhaps a better question to ask is, what are some potential drawbacks to using case tools over simple activity records or other tools?

While considering the use of cases, one should understand that it does add a process layer to the record. That is, of course, the whole point of the tool. That extra layer means the individual activities—your records of communication and interaction surrounding an issue—are one step removed from the contact record. If I visit John Doe's record, I will need to first enter the relevant case record to see those activities.

CiviCRM provides some excellent tools for exposing case details and activities to the system dashboard, so it's not as though the information and data is buried. However, you are adding a layer of "middle management", and if the volume and nature of your record keeping doesn't warrant it, it may be more cumbersome than helpful.

Configuring cases

At this point, you should have a good idea where you want to go with the case management tools and be ready to begin the configuration process. As alluded to earlier, CiviCRM's case configuration is more involved (and a bit more complicated) than other components. This is because each case type is highly customized to the types of activities, workflows, and roles involved in the resolution process. That customization, and the flexibility CiviCRM provides, adds a level of complication.

Your first step will be to define a case type and construct a corresponding configuration file specific to that type. Each case type will have its own configuration file, distinct from all others.

Define your case type by going to **Administer** | **CiviCase** | **Case Types**.

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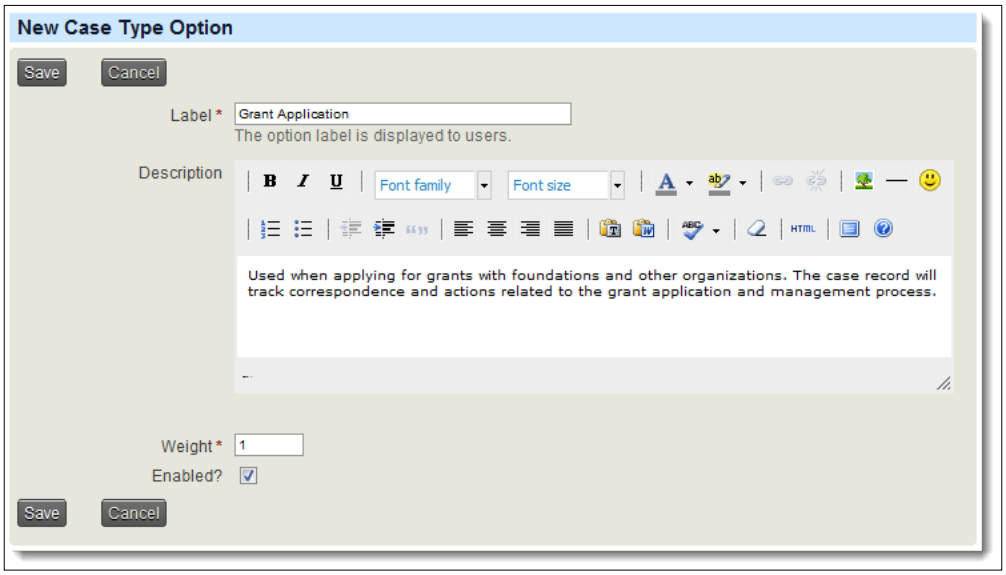

Take careful note of the **Label** you are giving to the case type. You will need to match it exactly while constructing the configuration file.

FPAGM periodically applies for grants to assist with capital purchases, training programs, or direct support for food pantries in the area. The Association decides to formalize the application and grant tracking process internally by using CiviCRM's case management tools. While they could have re-labeled the CiviGrant tool to reflect the grant application requirements (instead of its normal grant-dissemination orientation), their workflow needs and multi-step processes were better handled through CiviCase.

They begin by constructing a **Grant Application** case type that collects all communication and other activity records surrounding the grant process.

You may have noticed two other menu options when you navigated to the **Administer | CiviCase** menu: **Case Statuses** and **Redaction Rules**. Your case record will always have a status assigned to it. By default, CiviCRM ships with three statuses preconfigured: **Ongoing** (that is, open), **Urgent**, and **Resolved** (that is, closed). If you require additional statuses for your workflows, you can create them here.

A redaction is a correction or alteration to data. Redaction rules will match and replace text in a way similar to the system-wide word replacement tool at **Administer | Option Lists | Word Replacements**. The differences are that these redactions will only happen within the context of cases and the match definition may be constructed using regular expressions.

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Why would you use **Redaction Rules**? Some organizations may use case management in situations that require sensitivity to privacy concerns. **Redaction Rules** provide a way to alter or obfuscate data when you publish reports or send e-mails from the case record. The data is preserved in the system, but your sensitive data is not displayed in the generated report.

At this point, you can begin to construct your configuration file. CiviCRM ships with a few sample configuration files which are very helpful when first constructing it on your own. You should use them as a basis and edit them to suit your specific needs. They can be found at `/civicrm/CRM/Case/xml/configuration.sample`.

Your "live" configuration files must reside in `/civicrm/CRM/Case/xml/configuration/`. This folder does not exist in your initial installation of CiviCRM. You must either rename the preceding sample folder or create a new configuration folder.

As of CiviCRM 3.2.2, case configuration files may reside in your custom template override directory (see *Chapter 3, Installation, Configuration, and Maintenance* for details about configuring override directories). We strongly recommend that you place them in the `override` folder to avoid having them lost or overwritten when you next upgrade the CiviCRM codebase.

The configuration files are `XML`-formatted. They are structured very logically and are generally readable, but care should be taken as you work through the configuration steps as slight misspellings will cause errors when you try to create your cases.

You can create or edit the `XML` files in your preferred text editor. Using one that is `XML`-smart, that is, providing text coloring and collapsible fields, will help make the file more readable. We will assume you are using one of the sample `XML` files that ships with CiviCRM as we continue the configuration process.

If you are not familiar with the general structure of `XML` files, you may want to do some reading online to gain a better understanding (such as `http://www.w3schools.com/xml/`). In general, the structure is fairly intuitive. It consists of hierarchal fields and groups of fields that are defined by opening and closing tags. Each tag is contained in greater-than/less-than brackets, for example, `<tag>`, and is closed by the same tag with the addition of a backslash, for example, `</tag>`. A tag may contain many subsets of tags to create the field hierarchy. Consistent tabbing or spacing is used to help visually distinguish each level.

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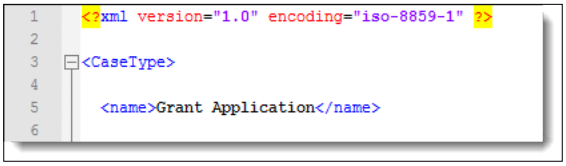
The first thing to note is the naming convention for the file. The name of the configuration file must match the label for your case type defined earlier, with all spaces removed and each word capitalized, for example:

- **Membership Application Process**: `MembershipApplicationProcess.xml`
- **Grant Application**: `GrantApplication.xml`
- **Onsite Analysis and Consultation Service**: `OnsiteAnalysisAndConsultationService.xml`

Note with the last example that although our label did not capitalize "and", the case filename does so in order to distinguish each word.

After naming/renaming the file, open it in your text editor and locate the `<name>` field located within the `<CaseType>`. Enter the exact name of your case type defined earlier between the opening and closing tags, as shown in the following screenshot:



You now have the core shell for your configuration file in place and are ready to begin building out the various options and functions.

Defining activities, workflows, and timelines

The heart of a case is its grouped history of activities. Whether you plan to use formal workflows and timelines or not, creating cases always provides the opportunity to manage a series of activities on a single topic. Once a case record is created, most of your interaction with it is likely to be in the form of creating and editing activities as you work toward case resolution. Consequently, the next step in your configuration process should be to define which activities will be available to your specific case types.

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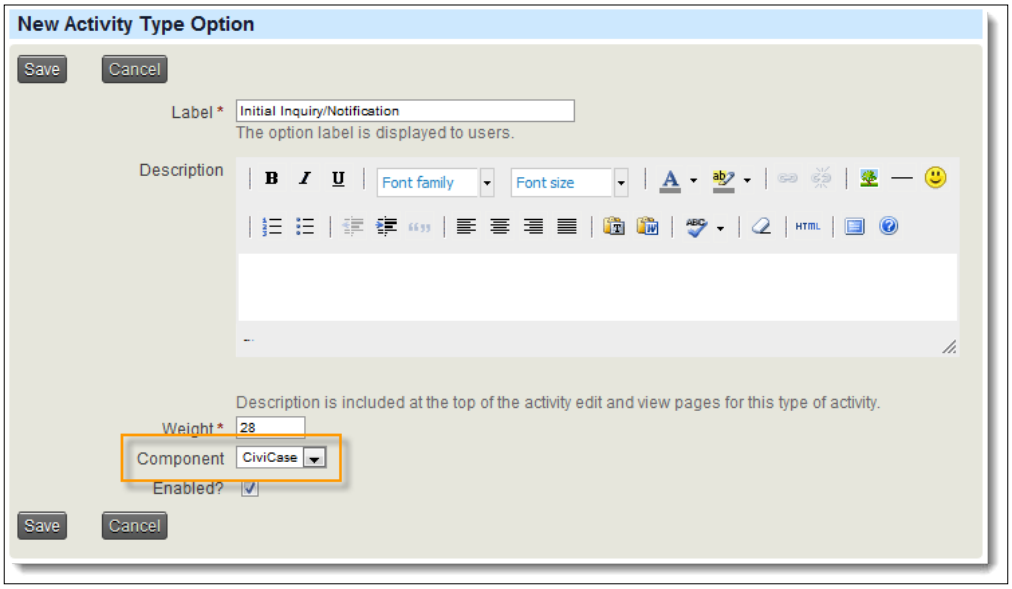
It's likely that a number of your general activity types will apply to case records and there are a number of standard case management activity types that should be included with all cases (such as change case status). In addition to these, you will need to create any activity type that will be used specifically for one or more case types. Create these by visiting **Administer** | **Option Lists** | **Activity Types**.



Note that if this activity is specific to cases and you do not want it visible and available as a standard activity, you should select **CiviCase** from the **Component** drop-down field.

Don't forget that specific activity types may be extended through custom data. You may want to plan on collecting additional information when creating certain types of activities.

Once these are defined in the system, you may add them to your configuration file. The full list will reside inside the `<ActivityTypes>` tag and each type will be inside its own `<ActivityType>` tag. Within that, you will add a `<name>` tag in which the exact name of the tag, as created in your system, will be placed.

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As part of its Grant Application case type, FPAGM anticipates a number of activity types unique to this case type. It creates the following activity types in the system:

- Initial Inquiry/Notification
- Permission to Submit/Application Received
- Scope Definition
- Internal Draft Submitted for Review
- Final Internal Approval
- Grant Proposal Submitted
- Denied/Case Closed
- Accepted
- Thank You Letter
- Report

The list of case activity types, in conjunction with several general use activity types, should accommodate the various steps or decision results in the grant application process.

Each type may have an optional `<max_instances>` value which limits how many times the activity may be added to the case record:

```
<ActivityTypes>
  <ActivityType>
    <name>Open Case</name>
    <max_instances>1</max_instances>
  </ActivityType>
  <ActivityType>
    <name>Follow up</name>
  </ActivityType>
  <ActivityType>
    <name>Change Case Type</name>
  </ActivityType>
```

Note that the **Open Case** activity type has a `max_instance` of one. This makes sense as a case record can only be opened once, and thus this activity should only be present once in a single case.

When constructing your configuration file, make every effort to retain the indentation structure as found in the sample files and previous screenshot. Doing so will help you ensure that each tag closes properly and you don't get lost in the structural hierarchy.

As you define your activity types, you may want to have your configuration file open and ready for editing so that you can copy and paste the values from your browser to the `XML` file or vice-versa and thus ensure that the values match exactly.

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After you have finished adding all activity types that apply to this case type, be sure to add a closing `</ActivityTypes>` tag in your `XML` file.

The next configuration block is where you define your timeline(s). It is labeled `ActivitySets` in the configuration file. Before we construct it, let's review exactly what a timeline is and what it does.

The purpose of a timeline is to establish a series of activities that happen in a defined order and are targeted for a period of time relative to other activities (dependencies). In addition:

- Timelines are optional. If your case type is primarily used for grouping activities and not to establish a defined workflow, you may not need to define a timeline beyond the initial `Open Case` activity.
- Timelines may be implemented automatically when a case is opened or made available as an option that can be applied to an already open case. In the first scenario, the activities defined in the timeline are automatically added to the case when it is opened. In the latter, the option of adding the timeline is available within the `Manage Case` screen.
- More than one timeline can be defined for a single case type. With the ability to make timelines optional and manually applied, this can allow for fairly complex workflow branching. For example, in our **Grant Application** use case, we could construct an initial timeline that takes us through the application process, and then create manually-applied timelines that address the workflow requirements based on our decision tree, whether the application is accepted, declined, or more information is required.
- Timelines can be used for audit reporting. The concept of an audit report is to track the progress of case resolution against a defined standard. For example, if you've defined a certain step in the process that needs to be completed within five days, you may want to run analysis on actual completion dates to determine if that window is too short (case workers are chronically late completing the task) and make adjustments to the workflow.

Let's look at the construction of our `XML` configuration file and the options available to better understand how timelines work.

The timelines will be grouped together inside the `<ActivitySets>` tag and each timeline will reside inside an `<ActivitySet>` tag (note the use of plurals and singulars to define the containing group and individual sets). Each set consists of the following tags:

- `<name>`: Unique name for the timeline. This should not contain spaces or other special characters. For example, you can name your initial timeline as `standard_timeline`.

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- `<label>`: User-friendly label to be displayed in the interface. This should be meaningful enough to distinguish it from the other timelines you might be creating.
- `<timeline>`: Set this value to `true` if you want the timeline to auto-populate the case record at the time it is opened.
- `<ActivityTypes>`: Container for the list of activities that are part of the timeline.

Inside the `<ActivityTypes>` container, you will list the individual activities that should be constructed when this timeline is applied to the case record. The structure is similar to what we did earlier where each type is contained inside an `<ActivityType>` block. However, there are additional options available while defining them here:

- `<name>`: Name of the activity type as previously defined in your system.
- `<status>`: The status of the activity when it is created on the case record. The default is `Scheduled`, but you may set the value to any of the available values previously defined in your system.
- `<reference_activity>`: The heart of the timeline function is the ability to schedule an activity with reference to a previous activity. This referencing consists of three values. The first is the activity that is the basis for defining the subsequent activity. Most often, you will base your references on the initial `Open Case` activity, but you may choose any activity type that precedes the current activity in your timeline.
- `<reference_offset>`: The number of days after the reference activity to schedule this activity.
- `<reference_select>`: If the reference activity occurs multiple times in your timeline, this value is used to determine if the newest or oldest instance of that activity should be the reference basis. Valid values are `newest` or `oldest`.

Activity types must be defined in the first part of the `XML` file in order to be available for inclusion in the timeline. If you add activities to the timeline that are not listed in the earlier section, your case record will render an error.

Timeline activities should be listed in chronological order within your configuration file or the case record will render errors. Specifically, any activity that is used as a reference basis for future activities must precede those future activities. The reasoning is simple—when CiviCRM creates the timeline and works through your configuration file, it will look for the existing activities in order to set the date for those reference-dependent activities.

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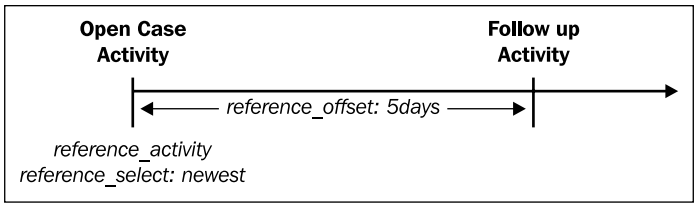
Consider the following diagram to better understand how the reference-related fields are defined. In this case, our `Follow up` activity is defined to start at an offset of five days after the `Open Case` activity. In our configuration file, we reference the newest instance of the `Open Case` activity. As `Open Case` is present only once, either `newest` or `oldest` would yield the same result.



FPAGM is uncertain whether their Grant Application process will warrant a fully defined timeline. As a result of the involvement of outside organizations in the process, they will not be able to reliably set firm deadlines for each step. However, they do want to make sure that staff stays on top of the application process, particularly in the early stages when the grant opportunity is identified and a case record is opened. Consequently, they create a standard timeline with a single **Follow up** activity scheduled for five days from when the case is opened. This will help ensure that some action is taken on the application within a relatively short period of time. The `<ActivitySets>` block from their `XML` file is shown in the following screenshot.

```
67  <ActivitySets>
68    <ActivitySet>
69      <name>standard_timeline</name>
70      <label>Standard Timeline</label>
71      <timeline>true</timeline>
72      <ActivityTypes>
73        <ActivityType>
74          <name>Open Case</name>
75          <status>Completed</status>
76        </ActivityType>
77        <ActivityType>
78          <name>Follow up</name>
79          <reference_activity>Open Case</reference_activity>
80          <reference_offset>5</reference_offset>
81          <reference_select>newest</reference_select>
82        </ActivityType>
83      </ActivityTypes>
84    </ActivitySet>
85  </ActivitySets>
```

At this point, you should have a good sense of the concepts involved in the timeline construction and understand the basic idea of defining multiple steps that are separated by a certain number of days. However, you may still be unclear as to how this will work out in the system.

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Later in this chapter, we will open and work with a case record. When inside a case, you will see a list of all activities associated with the case. If you've defined a case timeline, the list of activities will be pre-populated when you open a case with these scheduled activities using due dates defined by your offset values. What does that achieve? It creates your case task list--the list of actions that must be taken by you and other staff to begin the process of investigating and resolving the case record.

Who are your key players?

One of the other benefits of using a case is the ability to define case roles for the key players involved in resolving and managing your cases. A case role represents an individual *directly involved* in case resolution (usually your staff). whereas an individual activity record may have assignees; the case roles function goes further by defining the nature (role) of the person's involvement in the case. By attaching them to the case itself (and not just individual activities), we provide another level of management control over the case process.

Case roles are relationship types that your configuration file defines as applying to a specific case type. In order to implement them, you must first create the relationship types through: **Administer | Option Lists | Relationship Types**. Create the type as you would any other, but take note of the text used for **Relationship Label-B to A,** as that is the text that will be referenced in your configuration file.

When creating your case role relationship types, ask the following questions:

- Who will be involved in the case resolution process?
- Are there clear lines of responsibility that can be defined?
- How will I want to track and report on cases? For example, will I need to pull reports to determine which staff members are involved in what cases and in what capacity?
- Do different roles translate to different levels (and amounts of time) of engagement, such that I can determine staff resource allocation based on their roles?

FPAGM determines that there are three clear roles with regard to case management—**Case Manager**, charged with overseeing the progress of the case and managing resources, **Case Coordinator**, who is the primary day-to-day person working on a specific case, and **Support Staff**, who will occasionally be assigned to a case based on their expertise and the nature of the case. They use the **Relationship Types** tool to construct these three case roles.

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Once you've created the relationship types, return to the configuration file to add them as case roles. They will reside inside the `<CaseRoles>` tag, and each will be defined in a `<RelationshipType>` tag. Within that tag, you define the following:

- `<name>`: The name of the relationship type using the **Relationship Label-B to A** noted previously
- `<creator>`: If set to a value of **1**, the current logged in user who opens the case will be assigned this role
- `<manager>`: If set to a value of **1**, the role will be designated as the case manager

The third option above, `<manager>`, may be a bit confusing. If I have a case role (relationship type) defined as **Case Manager**, what is the significance of flagging a role as **Manager** in the configuration file? CiviCase assumes there is always one person primarily responsible for overseeing every case, regardless of what relationship types have been defined or how they are labeled. You flag the appropriate relationship as the case manager in order to have it easily displayed in the case listings and other views.

Your `XML` file will contain content similar to the following:

```
87   <CaseRoles>
88     <RelationshipType>
89         <name>Case Manager</name>
90         <creator>1</creator>
91         <manager>1</manager>
92     </RelationshipType>
93     <RelationshipType>
94         <name>Case Coordinator</name>
95     </RelationshipType>
96     <RelationshipType>
97         <name>Support Staff</name>
98     </RelationshipType>
99   </CaseRoles>
100
101 </CaseType>
```

At this point, you have finished configuring your case type `XML` configuration file. As displayed in the preceding screenshot, be sure to include the `</CaseType>` closing tag.

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What outside relationships are involved?

Along with case roles (people directly involved in case resolution), you will generally have additional contacts that are *indirectly* involved in the case process. These may be outside agencies, government bodies, consultants, or other organizations that assist you and are a general resource for your organization. We call them **Case Resources** and collect them as a directory of contacts available to the case.

To set them up in the system, first copy the `Settings.xml` file that was included in the `configuration.sample` directory to your configuration directory, open it, and locate the line containing `<group name="Case_Resources" />`. The name corresponds to a group you must create in your system that will contain the directory of resources. Use **Contacts | New Group** to create your `Case_Resources` group. You may, of course, name it differently. If you do, be sure to alter the `Settings.xml` file appropriately, replacing any spaces in the label with underscores as in the preceding example.

Any contacts you add to this group will appear in the case management page for easy reference when people are working with the case.

When we begin looking at a case record, we will also see that any existing relationship the contact has (employer, spouse, household, and so on) will be listed within the case relationships panel. This is all for the purpose of putting the most pertinent and useful information at your fingertips while you are working on the case.

Additional options and testing

At this point, your case types have been configured, you have created any activity and relationship type that will be part of the case process, and you've created a **Case Resources** group and populated it as desired. Before testing your configuration, let's take one more look at the `Settings.xml` file.

While working with this file to configure the **Case Resources** group, you may have noticed there are several other settings listed in this file. Let's review them:

- `<RedactActivityEmail>`: If set to **1**, the **send copy of activity via email** feature within the case activities will be redacted. In other words, your redaction rules will be run against the activity before it is sent.
- `<AllowMultipleCaseClients>`: By default, each case is associated with a single contact record. If you potentially need to associate multiple contacts with a single case, enable this option.

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- `<ActivityTypes>`: If desired, you may list activity types you wish to make uneditable. As you can see from the default file that ships with CiviCRM, the `Change Case Status` and `Change Case Start Date` activities are marked as uneditable. Why would you want to do that? The primary reason is to provide an auditable record of the case. The case record represents an ongoing list of actions taken in an effort to resolve the case. If that status changes at any time, it should be recorded as a point in time (an activity record). If the status changes five times over the life of the case, we would expect five time-stamped activities so that the history of what had transpired is retained. Consequently, those activity types should generally not be editable lest the history be manipulated or lost.

Once you've reviewed and made any changes to the `Settings.xml` file, it's time to test your case types and confirm that they are configured correctly.

Enter a contact record, navigate to the **Cases** tab, and create a new case. Alternatively, you could use the contact **Actions** button or **Create New** button to create a new case.

You should create a new record for each case type you have defined in the system to make sure each one is configured correctly.

You will know immediately if the configuration is correct. If there are any typos or misconfigured elements, CiviCRM will display an error message indicating that it was not able to create the case successfully. If the case is successfully opened, you should still review the list of available activities, case roles, and any activities auto-generated via a timeline to make sure it is constructed as expected.

If you do receive an error, review the following troubleshooting tips and common problems:

- Ensure that all activity types defined in your configuration files exist in your system.
- Ensure that all relationship types defined as case roles in your configuration files exist in your system.
- Check spellings carefully.
- Make sure that your case configuration files are titled and labeled accurately. Remember that they must match the case type defined in the system with title case text and no spaces.
- If you have renamed an activity or relationship after creating it, the configuration file may have difficulty recognizing the new name. Rather than renaming the types, it is safer to delete and recreate them to ensure that the name recorded in the database matches what is configured in the `XML` file.

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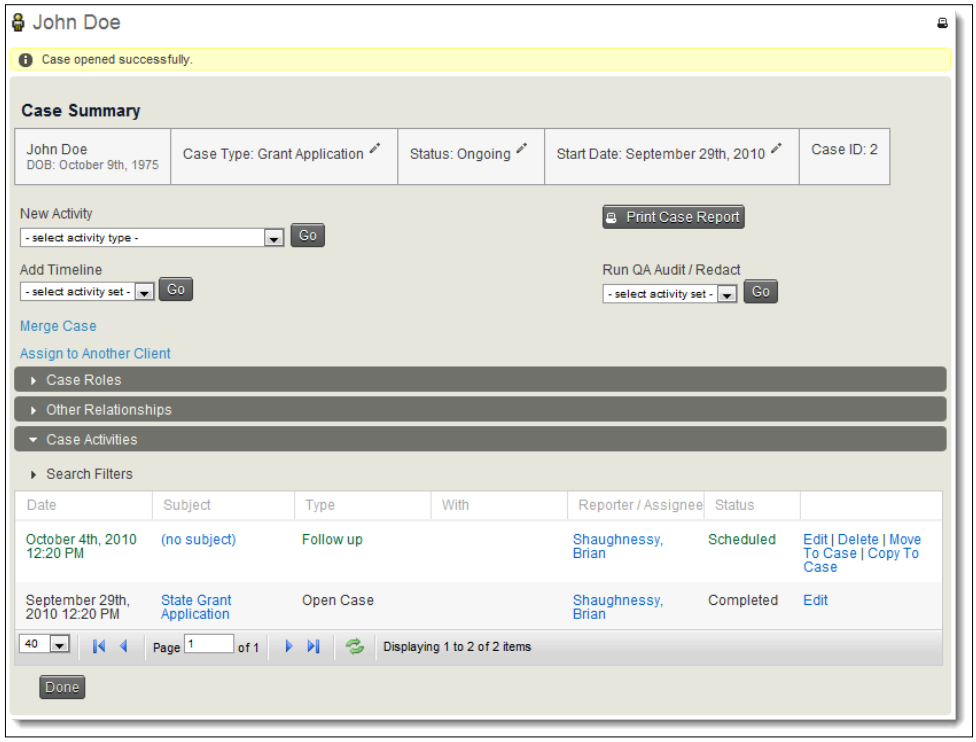
If you continue to have problems, focus on a single case type configuration file and remove sections to isolate the problem. For example, you don't need the `CaseRoles` and `ActivitySets` sections in order to have a functioning case type. Try removing them, running the case, and then adding each back in and re-testing to isolate the issue.

Tracking, managing, and resolving cases

Once fully tested, you're ready to begin working with cases. This will involve creating case records, working within them toward resolution, and searching/reporting on them.

Creating and managing case records

When you first open a new case, CiviCRM collects general details including the type of case you are creating, the status, the subject, and various details that will be stored in the open case activity. Once you've created the case, you will enter the **Manage Case** screen, where you will spend most of your case-management time.



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The screen is roughly divided into five sections:

- **Case Summary** and management tools
- **Case Roles**
- **Other Relationships**
- **Case Tags** (not present in the preceding screenshot)
- **Case Activities**

The summary includes the case client, type, status, start date, and reference ID. From this section, you can create a new activity, add a timeline to the case, merge the case with another case record, assign it to another client, print a summary report, or run a QA Audit/Redaction report.

Most of these tools are self-explanatory or have been described earlier. However, the QA Audit/Redaction report deserves further explanation. The dual-title indicates multiple purposes for the same tool. By "QA Audit", we refer to the ability to run a report in which we compare a defined target timeline against the recorded activities. This is useful if you have duration-defined workflows and want to see if the resolution process kept up with the target deadlines for various activities.

The redaction aspect of this report means the case redaction rules are processed when generating the report. Since the redaction rules can be used to remove or obfuscate sensitive information where there are privacy concerns, this ensures the ability to create a "sanitized" report that can be disseminated beyond the primary case managers.

As one might expect, the **Case Roles** panel displays a list of the roles you have defined in your case and allows you to assign people to those roles or create new role-relationships. Note that although the list is pre-populated with the roles defined in your configuration file, you may add additional roles if needed. For example, you are not limited to having a single person assigned to the **Case Coordinator** role.

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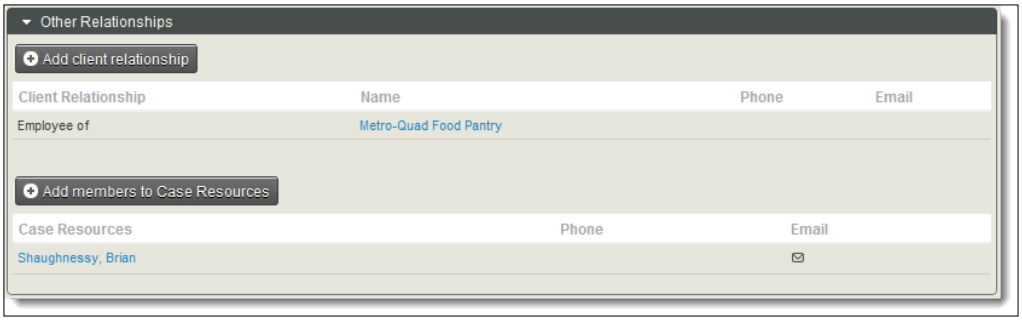
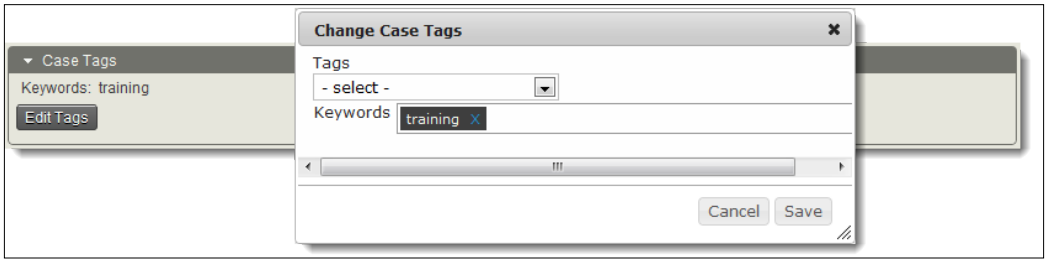
The **Other Relationships** panel contains two pieces of information: a list of any existing relationships attached to the record (such as employer, spouse, and so on), and the list of contacts found in the **Case Resources** group defined in your `Settings.xml` file. As mentioned earlier, these are included in the **Case Management** screen for the sake of convenience.



A **Case Tags** panel and button for adding them to the record will appear once you have created a tag at **Contacts | New Tag** with **Used For** set to **Cases**, or constructed a tagset for use with cases. A popup then lets you select from a drop-down list or tagset field to attach one or more tags to the case, as shown in the following screenshot:



The final panel, **Case Activities**, is where you are likely to spend most of your time. Since a case is primarily a collection of activities that may be ordered in a timeline, it makes sense that most of your work with cases will involve creating and editing activities.

Anything and everything you do as you work to resolve the case should be tracked as an activity. Whether you are making phone calls, receiving e-mails, changing the status, or even just reviewing the case history, you will benefit from taking the time to track each activity in the system. If someone else becomes involved in the case resolution, they will have a history of all communication that transpired with regard to the case. This will allow them to quickly jump in and begin working toward resolution.

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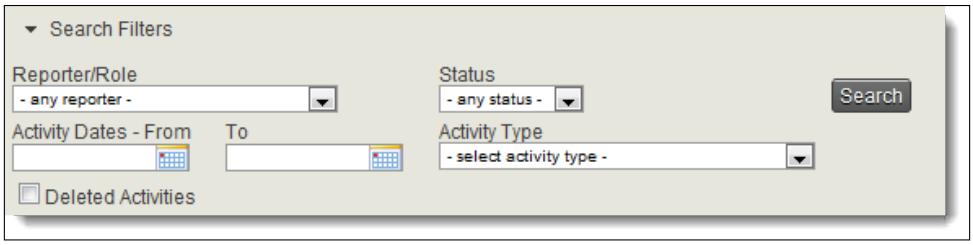
Activities are ordered by date with the most recent first, but the sort order is dynamic and can be rearranged on any column. As with standard activities, scheduled activities will appear in green, and scheduled but overdue activities will be displayed in red. Activities may be edited and may also be moved or copied to another case (notice the rightmost column with various action links in the earlier **Manage Case** screenshot, in the activity listings section). This is useful if a contact has multiple cases open and you inadvertently recorded an activity against the wrong case and now must move it. Alternatively, if there are multiple cases open surrounding a common issue and you held a conference call with several involved constituents, you may record the activity against one case and copy to the others.

Be sure to note the **Search Filters** panel that opens up above the activities listing. Open this to expose some search/filter tools for your activity list. This will prove helpful if you have large cases that extend for a length of time and have accumulated many activities.



Before we move on, take note of the icons present throughout the **Case Management** screen, most notably the icon that looks like a pen. The "pen" is used to edit or take action on the record. In some cases, it will cause you to enter the edit view of the record or trigger a popup to add/edit information, such as assigning a case role. In other instances, it will trigger creation of an activity, such as clicking the icon next to the case status, which will generate a **Change Case Status** activity record.

In every instance, it provides a quick and easy way to take action on elements of the case record.

Tracking, searching, and reporting cases

As with most components, you have a **Case Dashboard** and **Find Cases** utility available through the **Cases** menu (which, by default, is found under the **Other** menu). The **Case Dashboard** includes several useful tools, including a grid listing the number of cases by type and status (hyperlinked for easy retrieval), a list of cases with upcoming activities and a list with recently performed activities. Both of these lists can display all cases or just those connected with the currently logged-in user (**My Cases**).

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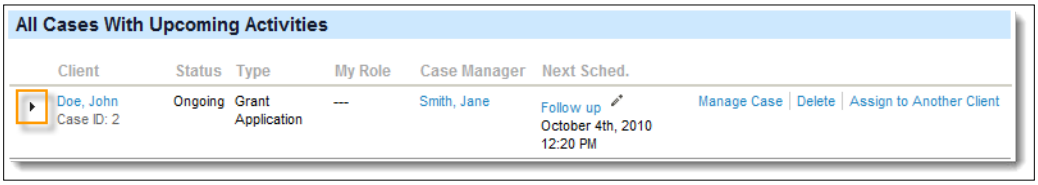
These lists of cases can be expanded to display scheduled and completed activities. In addition, the **All Cases** and **My Cases** lists are available as special dashlet reports on the site **Dashboard**. If you are overseeing case management, it will be useful to have those dashlets configured for your dashboard so you can quickly gain a snapshot of case activities when you first enter the system.



The **Find Cases** tool is very straightforward. You can search by client name, e-mail, case type, status, whether the logged-in user is involved in the case (**Search All Cases** or **Only My Cases**), and tags.

Note the option to search for deleted cases. Similar to the trash function that stores deleted contact records, deleting a case does not permanently remove the record, but rather moves it to the trash. By opting to search for deleted cases, you may restore them should you determine they were mistakenly deleted.

In addition to the single-case detail report that can be generated from within the **Manage Case** screen, CiviCRM includes three reports related to cases that can be accessed at **Reports** | **Create Reports from Templates**. The reports are:

- **Case Summary Report**: Displays a summary of cases, listing the client, start/end date, status, duration, and other details.
- **Case Time Spent Report**: Geared toward tracking activities associated with cases and summarizing the total amount of time (duration) spent on them. This report can also be used to report on non-case activities.
- **Contact Demographics Report**: Displays demographics for constituents and includes access to custom contact fields.

Using the dashboard, search, and report tools, you can easily maintain oversight of cases as they are worked on and gradually resolved.

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Summary

In this chapter, we took a look at cases by first understanding what they are, reviewing potential use cases that may not be immediately obvious, and contrasting their benefits/drawbacks/purpose compared to standard activities. We then:

- Defined the key terminology and concepts related to cases, namely case activities, timelines, case roles, and case resources
- Walked through the construction of a case configuration `XML` file
- Tested and began using the newly configured case type, reviewing potential troubleshooting steps if your configuration did not fully function
- Reviewed the tools available for monitoring and managing cases through the dashboard, search, and reporting tools

In the next chapter, we will turn attention toward CiviCRM's grant management tools that can be used for organizations disseminating grants and those that need to track details for grantees.

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11
Providing Support: Grant Management

We've covered a lot of ground so far, and have now come to the last chapter dealing directly with constituent-record data tools. In this chapter, we will discuss grant management. If you are an organization that manages and disseminates grants, CiviCRM provides some basic tools to help you collect and track details related to the grant management process. If your organization is typically on the other side of the equation, that is, applying for grants, rather than disseminating them, then you may still find the CiviGrant tool useful for managing that process. Toward the end of this chapter we will offer some suggestions for reconfiguring the CiviGrant component in a few small ways so that you can use it to track the grants you are applying for.

In this chapter, we will cover:

- Defining the grant application process
- Managing grantees
- Tracking grant applications
- Applying for grants

Using these tools helps you integrate this process with your other constituent management activities, making your organization a more efficient and productive financial support provider and/or recipient.

Defining the grant application process

CiviCRM's grant management tools are admittedly basic. However, in the broader context of CiviCRM's other constituent management tools, they provide a very useful set of functions.

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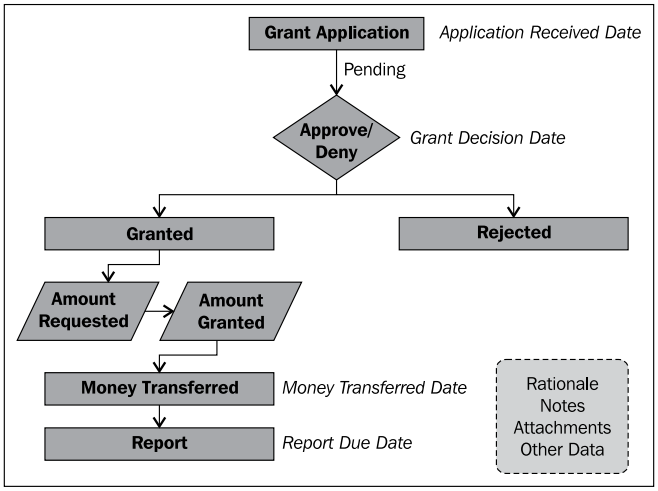
Before configuring the grant tools, let's first understand the basic process assumed by CiviCRM as it relates to grant workflows. The following diagram helps visually communicate the workflow for organizations giving or receiving grants:



The grant application process basically consists of receiving applications, processing them to determine if they are to be approved or denied (that is, granted or accepted), and then tracking the progress as funds are transferred and reports are received from the grantee.

Grant records, like most other areas of CiviCRM, can have custom fields created and attached to them. In this way you can set up as many additional fields as desired to help in the grant-making or grant-seeking process. The ability to attach documents to records in CiviCRM is particularly useful when it comes to grant application documents. It is also useful for attaching scanned copies of official correspondence.

Grants are categorized by type allowing you to search for and track the status of different grants organized by type. Before beginning the grant management process you should review the existing grant types configured by default and add/edit/delete as necessary. You can access them at **Administer** | **CiviGrant** | **Grant Types**.

If the CiviGrant submenu is not visible, make sure you have the **CiviGrant** component enabled. Visit **Administer** | **Configure** | **Global Settings** | **Enable CiviCRM Components**. By default, the **CiviGrant** component is disabled. Enabling it will restore the **CiviGrant** submenu under **Administer**, and also the main **Grants** submenu (under **Other**).

Once you've thought through the grant types, created any custom fields you want associated with grants, and reviewed the general grant workflow, you can begin managing your grant applications.

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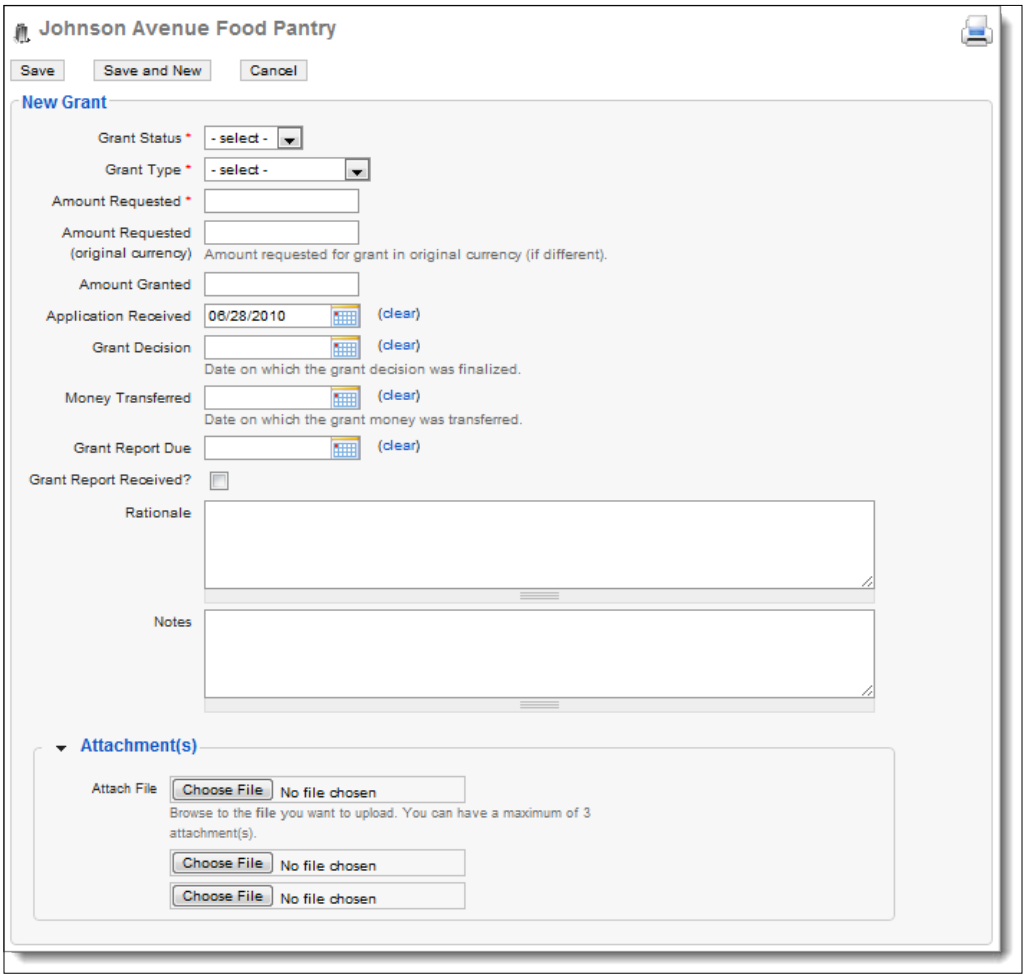
Managing grantees

As with most areas of CiviCRM, your grant management tools will be available through the main menu and a corresponding tab will be displayed on contact records. By default, the **Grants** menu is a submenu under **Other**. If you expect to be a heavy user of the grant tools, you may want to move it to the main menu. Visit **Administer** | **Customize** | **Navigation Menu** to edit the main horizontal menu.

Let's begin by visiting a contact and creating a new grant record.



As you can see, the grant record follows the flowchart workflow pretty closely. You select the desired status, type, and complete the other fields as appropriate.

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Grant records are a little different from other areas of CiviCRM in that you are likely to return to edit the record multiple times over the course of the grant process. As the grant moves through the application, approval, fund dissemination, and reporting stages, you will return and edit the record to update the dates and record notes or add attachments pertaining to the grant.

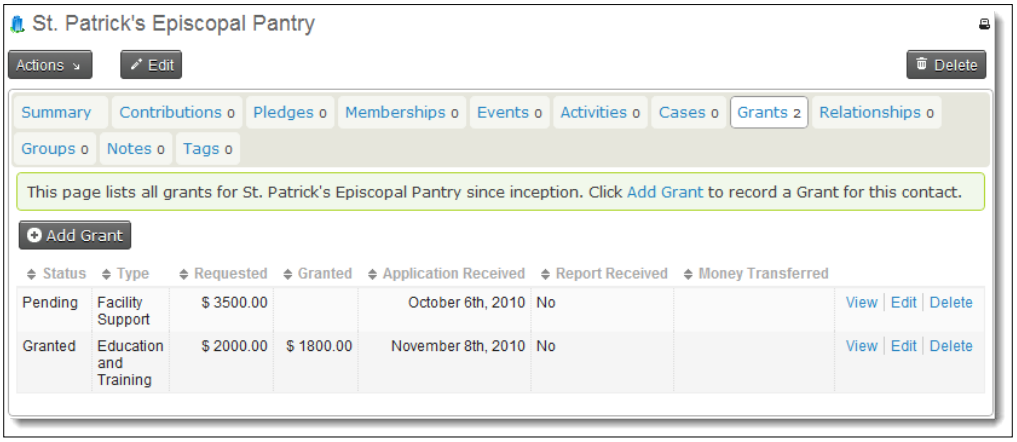
As with other related record areas, contacts may have more than one grant record associated with them.

FPAGM received a significant donation from a local philanthropist to help food pantries develop new healthy eating programs. The programs will educate clients regarding healthy eating and provide guidance on simple recipes using ingredients rather than processed, prepared foods.

The donation will support five programs at food pantries in the area. FPAGM decides to use CiviCRM to track the grant application and management process. They begin by sending out an e-mail to **Regular** members through CiviCRM with application guidelines. As the applications are received, a new grant record is created.

The application requires food pantries to report details regarding their geographic demographics, and to describe how many people they plan to reach through this program. All of this data is tracked using custom fields, and the hard copy application is scanned and attached to the grant record. In this way, FPAGM ensures that all the details of the process are stored in a centralized location.

The following screenshot shows the grant records as viewed through the contact's **Grants** tab:



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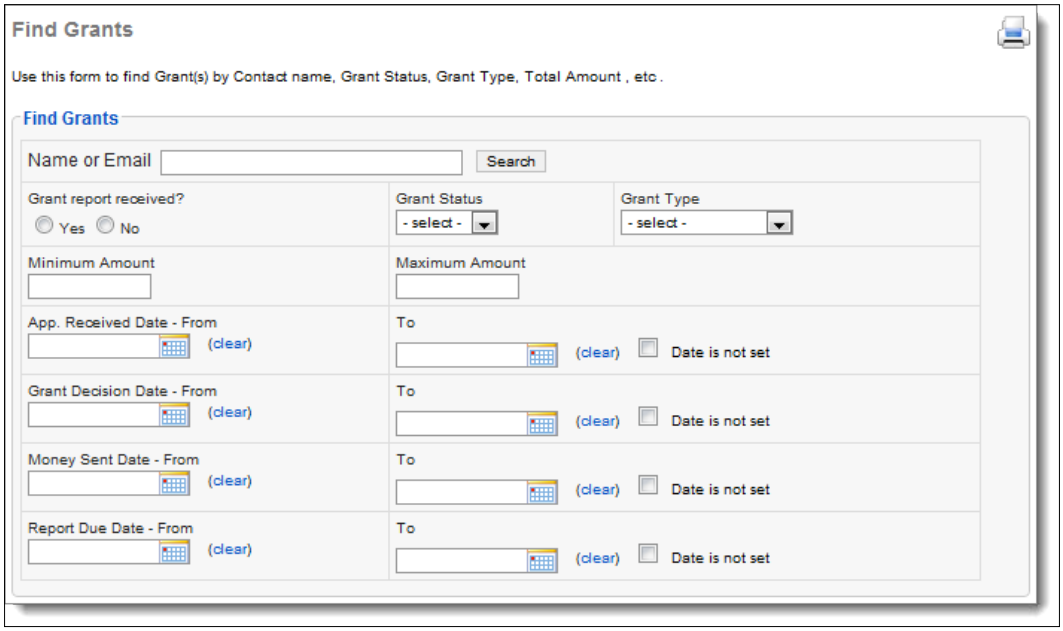
Tracking grant applications

Let's take a look at the tools available in the **Grant** submenu for tracking grant records. As you might expect, **Grants** follow a similar pattern as other areas by having a dashboard summary of grant statistics, a **Find Grants** tool, and a link to quickly create a new grant record.

The dashboard summarizes the number of grants by status (with each cell hyperlinked to display a filtered list of records), and a list of recent grant records created.

Find Grants provides access to each of the relevant data fields, including ranges for the grant amount and date fields, as shown in the following screenshot:



The date range fields provide the additional option of searching by an empty value. For example, if you are looking for an updated list of applicants who have not yet received a funds disbursement, you can select a status of **Granted** and **Money Sent Date** of "not set", and run your search.

Grant records may be exported to a `CSV` file after running your search.

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Other side of the coin: Applying for grants

Although the CiviGrant component is primarily intended for the grant administration process, presuming that the organization implementing CiviCRM is the grantor disseminating funds, it's worth noting that the grant tools can be adapted easily to manage your organization's applications for grants from other entities.

In this alternate case, the contact record you are working with is the grantor, rather than the grant applicant and potential grantee. You are using CiviGrant to track your application to the organization and subsequent communication transpiring over the course of the process.

Since the workflow is essentially identical regardless of which direction you are coming from in the process, we simply need to alter terminology throughout the interface to better communicate your role as a grant applicant. There are two ways this can be accomplished—by modifying the CiviCRM template files, or using the word replacement tool. As a general rule, it is better to use the word replacement tool to the extent possible, as it is more dynamic and avoids having to maintain custom versions of template files. Use the tool to define existing text and replacement text; wherever the existing text is found in the system, it will be replaced. At times you may find text that is not easily isolated (for example it is too generic or used elsewhere in the system) and cannot be replaced universally. CiviCRM uses the Smarty Templating System to present content and provides the ability to define an override directory in which replacement templates files are stored. Using template overrides you have full control over the text and layout of your pages. Refer to *Chapter 3*, *Customization, Community, and Cooperation* for more tips on customizing the interface in this way.

- Using word replacements, we see several places in the interface that would benefit from being changed to better communicate this alternate grant application perspective. Visit **Administer** | **Option Lists** | **Word Replacements**, and then enter the following:

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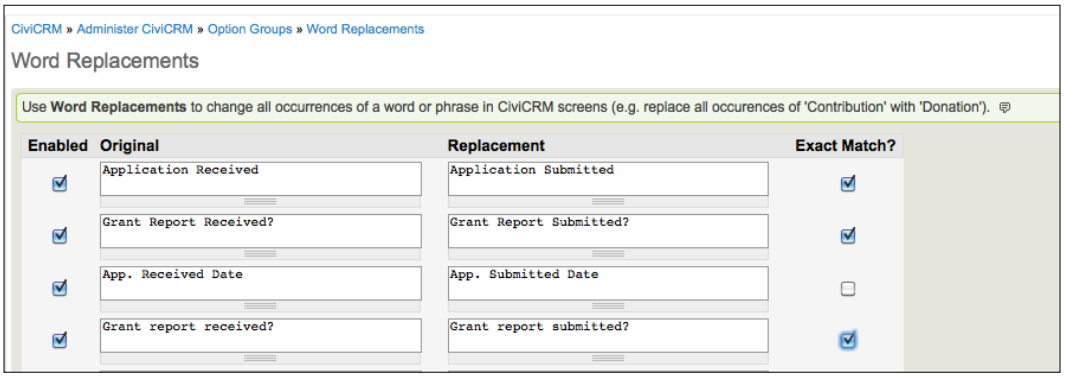
CiviCRM » Administer CiviCRM » Option Groups » Word Replacements
Word Replacements
Use Word Replacements to change all occurrences of a word or phrase in CiviCRM screens (e.g. replace all occurences of 'Contribution' with 'Donation').
Enabled
Original
Replacement
Exact Match?
Application Received
Application Submitted
Grant Report Received?
Grant Report Submitted?
App. Received Date
App. Submitted Date
Grant report received?
Grant report submitted?

- After you have entered the changes, click on **Save**. Check if the interface has changed correctly by navigating to **Other** | **Grants** | **New Grant** and **Other** | **Grants** | **Find Grants**.

If you regularly apply for grants to different organizations and find the tools available through the grant component to be too limiting, consider using CiviCRM's Case Management tools by creating a case type to track communication with the grantor.

As covered earlier in this book, case records consist of a collection of activity records grouped together around a common issue. Since a grant application is primarily a series of communications and reports passing between the grantor and grantee, a case may serve as a suitable alternative to the grant component.

Summary

The opportunity to support other organizations through financial assistance is coupled with the responsibility to administer those funds and application details carefully. Your funders will expect that you will take as great care administering funds as your grantees do expending them. Using CiviCRM, you have effective tools to handle this process as a part of your overall constituent management program.

In this chapter, we:

- Reviewed the grant management workflow and discussed how it translates to the CiviCRM model.
- Created new grant records and saw how each step in the process is tracked.
- Searched for grants and noted the various field options unique to these records.

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- Discussed the possibility of repurposing the grant management tool for your organization's grant application to other entities. We also briefly considered the alternative option of using CiviCRM's case management tools for grant application processing.

In the next chapter, we will turn our attention to CiviCRM's reporting functions and see how we tap into the data stored to generate lists and graphical representations of our information.

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12
Telling Your Story: Building Reports

We've spent the last 11 chapters exploring the many ways we can capture and store information about constituents, work with contact records, perform bulk actions on records, create forms and expose data on our site, and build multi-dimensional depth in our organization's data.

With this increasing breadth of information, our next goal is to retrieve and display our data through reports. In this chapter, we will:

- Discuss the purpose, terminology, and basic concepts of CiviCRM reports
- Review the tools available for generating and publishing reports
- Put these tools in context within your organization

Getting to the bottom line

What is a report?

Ok, that may seem like a trite question. However, we ask it with sincerity: What is a report? When the Executive Director, Membership Committee Chair, Fundraising consultant, Board Secretary, or staff supervisor in the next cubicle asks you for a report, what are they expecting to receive? What makes a report different from a set of records exported from search results?

Reports present *data with a message*. More than raw data and more than just a subset of records, reports are meant to tell a story. We can begin to understand their purpose by comparing them to search results. They are similar, but differ in several important ways:

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- Reports are more specialized in the types of data that can be filtered and the way in which that data is rendered.
- Reports are intended for more visual uses, whereas a search result yields a simple list of data which can be exported or acted upon in other ways. A report may present results with a header, footer, and more visually appealing layout which can be printed, published to PDF, e-mailed, or otherwise distributed.
- Reports may group data and display summary calculations (sums, counts, and so on) or graphical representations of the results (such as pie and bar charts).
- Occasionally, reports are more like data to be acted upon, such as a walk list of contacts or a report for the bookkeeper listing every online transaction within a period.

These practical differences help us better understand and distinguish reports from a raw set of data. However, what drives a report ultimately is its goal to transfer knowledge and communicate a message.

In this sense, a report is all about the bottom line. When we build a report, we want to see the change over time, depth of constituent involvement, breadth of impact with various campaigns, and other metrics that tell us how well we are serving our constituents, reaching our audience, building a network, and generating support.

As we begin looking at specific tools, don't lose sight of the forest through the trees. The tools are a means to an end; they are meant to help you communicate your message to stakeholders (members, donors, and active participants), and decision makers (board of directors, management, and committees). However, the heart of what you're communicating is the message, and not the `PDF` file or hardcopy document which we call a "report".

Toolsets and timing

Reports are accessed from the main navigation menu. Within the reporting tool, we have report **templates** and report **instances**:

- **Report template**: This defines the features of a report. This includes what fields are available to the report, options for grouping and filtering, display choices (tabular, bar/pie chart), and any other options available.
- **Report instance**: This selects and saves specific criteria and options you wish to view. For example, you may want to view a constituent summary report displaying all contacts in Group A. At a later time, you may create a second instance of the constituent summary report displaying all contacts in Group A and Group B.

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A template will be reused many times as different criteria and display options are selected to meet specific needs. After generating a report, you may print it, export as `.csv`, or publish as `.pdf`. It is common to refer to a report instance as simply a report, but you should make sure that the distinction between the template and instance is clear.

CiviCRM is packaged with a number of report templates covering all the major data types and purposes you would expect. The construction of a template does require programming skill, though the structure, design, and method of registering them in the system are all designed for extensibility. If you create a report that may have value to a broader audience, or extend an existing one by programming in more features, consider contributing it back to the project for inclusion in core.

In contrast, the process of selecting criteria and options for a report instance are designed to be easily managed by non-technical staff.

While creating a new report or editing an existing one, you will be presented with **Report criteria**, **Report settings**, and a **Preview** of the report, each of which is contained in an expandable panel. In order to create a new report from a template, visit **Reports** | **Create Report from Template** and select your desired template. Select **Reports** | **Report Listings** to view all saved report instances.

Report Criteria

Report Criteria will include options such as what fields may be included in the report, how they will be grouped, what filtering criteria may be applied, and how the results should be ordered. These settings are defined in the template code and will be specific to the nature and purpose of each template. For example, contribution reports will have contribution-related fields and options that the constituent report does not have. While creating and editing a report, most of your time will be spent adjusting these options to meet your needs.

For some of the more complicated reports, certain display fields and grouping options are dependent on each other, or are mutually exclusive of each other. For example, the donor report (summary) cannot be grouped by the received date if the contact name column is included. These limitations are generally due to the nature of the data being retrieved and grouped.

When adjusting the criteria for an existing report or setting criteria for a new report, you will often need to do some testing and tweaking before the report displays exactly as you desire. This is easily done by adjusting the criteria and clicking to preview the report, and then continuing to adjust and preview as needed.

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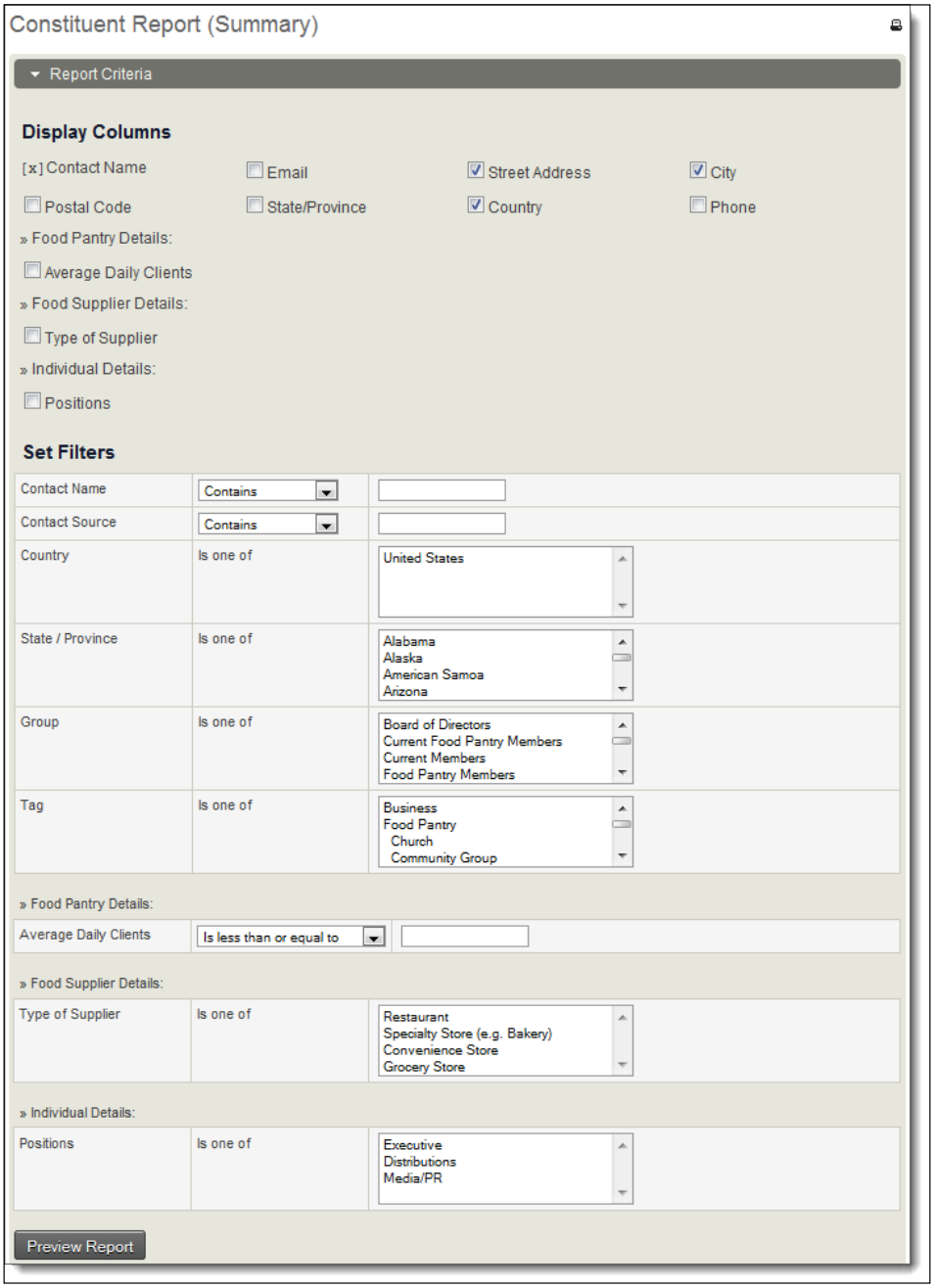
The following screenshot displays the criteria options for the **Constituent Report**. Note that some reports support inclusion of custom data fields and filtering on them too, as seen with the Food Pantry fields in the following example:



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Report Settings

Report Settings control the title of the report, the header and footer text (which will be displayed when the report is printed or exported as a PDF), e-mail settings, permissioning options, and navigation settings. Let's take a minute to understand each of the options in this panel, as they are common to all reports.

The title and description appears in the report listing page and should help users understand the criteria you configured for the specific report. When completing these fields, be specific about the purpose and criteria selected. For example, rather than using a generic title such as "Contribution Report", use a more descriptive title, such as "Donations Received, Year to Date".

The header and footer fields contain the HTML code that is inserted into reports when they are printed or published to PDF. The default content may be sufficient, but is very generic. You may wish, for example, to replace the <title> tag with the actual title of the report. You may also want to include images and CSS styles to customize the look of your report. You do need to have at least a basic understanding of HTML in order to work with these fields. Be sure that your footer closes any tags that were opened in the header (such as the <html> and <body> tags).

The report instances may be generated as a PDF file and e-mailed on a periodic basis. For example, you could have a report e-mailed to staff management every Monday that provides an overview of the recently received contributions. The membership services director could receive a report with upcoming lapsed memberships to make phone calls in order to solicit renewals of the same. Use the fields in this section to determine the recipients of the report (comma-separated lists) and the subject line of the report.

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Note that the e-mail reports functionality requires setup of a cron job to control the reports that should be e-mailed, and the delivery frequency. Simply completing the fields present within the report settings will not actually trigger the report delivery. The cron job should invoke a URL using the following format (using wget or curl), where the `instanceID` value for your report is replaced with the corresponding report ID in your system:

- Drupal: `<yourwebsite>/sites/all/modules/civicrm/bin/CiviReportMail.php?instanceId=3&reset=1&sendmail=1&<name>=username&<pass>=password&<key>=sitekey`
- Joomla!: `<yourwebsite>/administrator/components/com_civicrm/civicrm/bin/CiviReportMail.php?instanceId=3&reset=1&sendmail=1&<name>=username&<pass>=password&<key>=sitekey`

For a full discussion of cron jobs in CiviCRM, refer to *Chapter 3, Installation, Configuration, and Maintenance*.

After creating a new report, you may view it on the **Reports Listing** page under the main **Reports** menu item. This page will always display the complete list of report instances active on your system. Additionally, you may choose to add a report instance to the navigation menu in a specified location. This ability is not restricted to the **Reports** menu item. For example, if you create a standard bookkeeping report that displays contributions received over the previous seven days, you can add that to the **Contributions** menu item.

Under the **Other settings** section of **Report Settings**, click on the checkbox and select the parent menu item your report should fall under. Leave the parent menu field empty (set to **– Select –**) if you want the report added as a top-level menu item.

Drupal users may restrict a report to certain permission(s) using the next field in the display. For example, you may decide that your contribution-related reports should not be accessible to the data entry staff who would have no need to review potentially sensitive financial data.

The last option in this section provides the ability to enable the report to be included in the CiviCRM home page dashboard. Recall that when you first enter CiviCRM, you are presented with a dashboard page which displays a number of reports. The dashboard is fully configurable on a user-basis, meaning each user may choose different reports to include on that display. CiviCRM includes several special reports that are available as dashlets, and you may enable any other report created through the reports tool to be a dashlet. Very wide reports generally do not make good dashlets.

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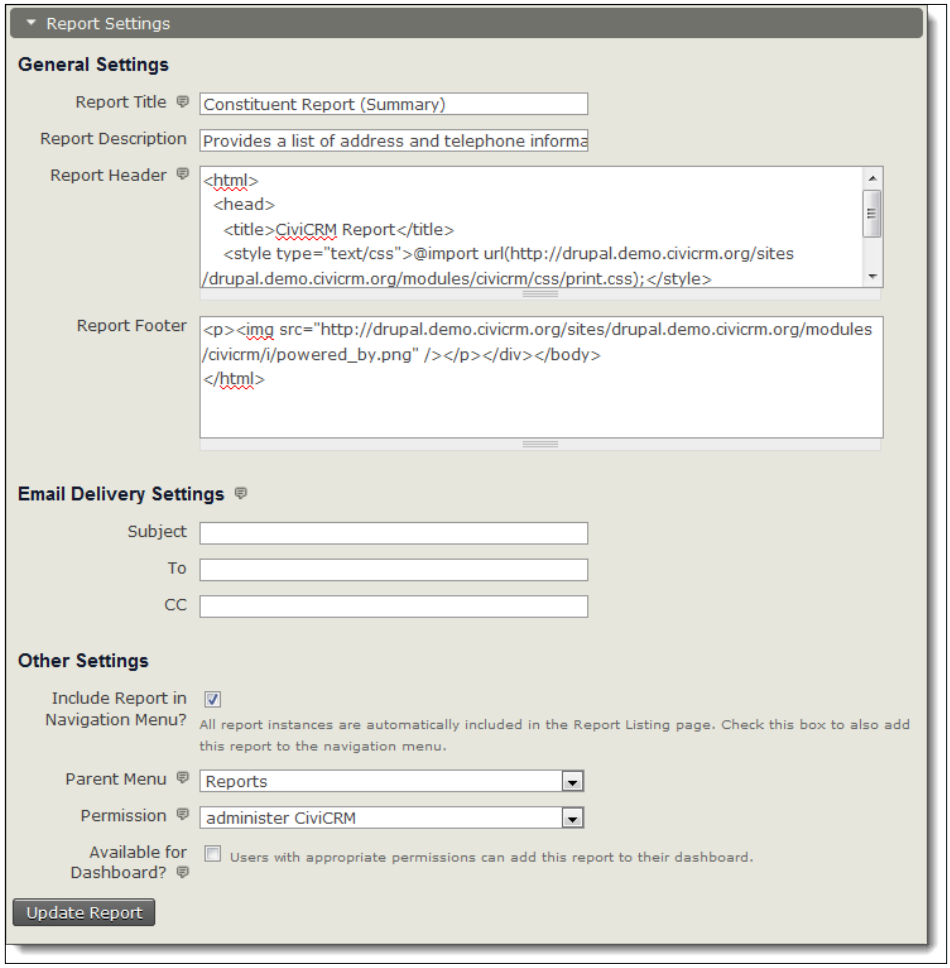
Note that enabling a report as a dashlet does not automatically include it in your dashboard—it simply makes it available as an option. It is up to each user to configure their dashboard as they desire.

The following screenshot is a sample **Report Settings** panel:



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Report workflows

While working with reports, you will typically do one of the following:

- Review an existing report instance
- Review and modify an existing report instance on a temporary basis
- Review and modify an existing report instance, choosing to update the saved report with your new criteria and settings
- Create a new report from a template

As mentioned earlier, you may visit **Reports** | **Reports Listing** to see a list of all the existing saved report instances, or if available, select your report from the appropriate menu item. Note that not all reports will necessarily be found on the **Reports** menu, as menu assignment happens on an individual-report basis. If you are working with an existing report and alter any of the criteria or settings, a button entitled **Update Report** will be displayed.

Understand that clicking this button will save your settings to the report instance you are currently working with. Be sure you intend to do this, as it may alter the original intent of the report and affect other users. If you are only altering the criteria for temporary use, do not update the report; simply choose to preview the report, which allows you to view and take action on the report without saving it.

Depending on how you have configured CiviCRM, you may have already noticed that certain report types are not visible in your system. CiviCRM categorizes reports according to the component they work with, and will only display available reports for those components that you have enabled. For example, if you are not using the **Membership** component, you will not see any reports that display membership records.

You create a new report instance by going to **Reports** | **Create Reports from Templates** or **Administer** | **CiviReport** | **Create Reports from Templates**. From this tool, you select the report template that will generate the report, choose your criteria and options, and name the report. Once it is named and saved, it can be retrieved and your criteria and options will be preserved.

When creating a new report, you must first select your desired criteria and preview the report before you are given the additional report settings options. This is done to ensure you have valid criteria before saving the report.

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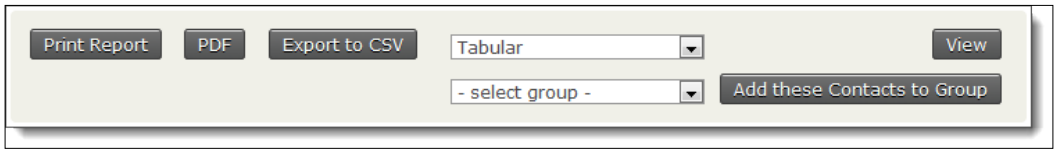
As noted earlier, completed reports may be printed, published as a PDF, or exported as a CSV file. Some reports may be displayed in graphical format, such as a bar or pie chart. Constituent reports may have the option of adding the resulting contacts to a group.



You may run into difficulties printing very long reports as a PDF file. The PDF generation engine is very resource-intensive. Depending on the quality of your hosting environment, you may experience server timeouts while creating large PDF files. If you find this happening, consider restricting your criteria to generate smaller subsets of your report for PDF generation, or consider upgrading your hosting environment to a more robust solution.

Available templates

CiviCRM ships with over 25 report templates covering everything from constituent lists, bookkeeping reports, event participation, memberships, and case review. The following list, organized by CiviCRM component, provides a brief description of each template available at the time of writing this book.

Note that new report templates are continuously added to the system; review the list on the **Create Reports from Templates** page for a description of reports available with your current version.

Contact report templates

The contact report templates are as follows:

- **Constituent Report (Summary)**: Provides a list of address and contact information for constituent records.
- **Constituent Report (Detail)**: Provides contact-related information on contributions, memberships, events, and activities.
- **Activity Report**: Provides a list of constituent activity, including activity statistics for one or all contacts during a given date range (required).

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- **Walk/Phone List Report**: A basic contact report with layout options designed for use in a phone bank or as a walk list. This report has additional use with the CiviEngage toolset. Originally designed as a Drupal module geared toward political campaign support, CiviCampaign and elements of CiviEngage will be included in core CiviCRM as part of v3.3.
- **Current Employer Report**: Provides a basic report detailing contacts in an employer/employee relationship. The report includes details about the relationships, such as the relationship start date (employed since).
- **Relationship Report**: Filters constituents by relationship type for either side of the relationship, and by groups, tags, and address fields.
- **Database Log Report**: A log of contact and activity records created or updated in a given date range (changelog data).
- **Activity Report (Summary)**: Shows activity statistics by type/date, filtered by status or priority.

Contribution report templates

The contribution report templates are as follows:

- **Donor Report (Summary)**: Shows contribution statistics by month/week/year, country/state, and type.
- **Donor Report (Detail)**: Lists detailed contribution(s) for one/all contacts. Contribution summary report points to this report for specific details.
- **Donation Summary Report (Repeat)**: Given two date ranges, shows contacts (and their contributions) who contributed in both the date ranges with percentage increase/decrease.
- **Donation Summary Report (Organization)**: Displays a detailed contribution report for organization relationships with contributors. This includes the contribution record from an employee of some organization or from that organization itself.
- **Donation Summary Report (Household)**: Provides a detailed report of contributions made by contributors (or the household itself) who have a relationship with the household. For example, a contributor is the head of household for some households, or is a member of the household.
- **Top Donors Report**: Provides a list of the top donors during a time period you define. You can include as many donors as you want (for example, top 100 of your donors).
- **SYBUNT Report**: "SYBUNT" stands for "Some year(s) but not this year". It provides a list of constituents who donated at some time in the history of your organization, but did not donate during the time period you specify.

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- **LYBUNT Report**: "LYBUNT" stands for "Last year but not this year". It provides a list of constituents who donated last year, but did not donate during the time period you specify as the current year.
- **Soft Credit Report**: Provides soft credit details. Contacts may be manually marked for soft credit when the contribution record is created, or they may be automatically marked for the same, if the contribution originated through their personal campaign page.
- **Bookkeeping Transactions Report**: Provides contribution details geared toward regular reporting needs of bookkeepers.

Member report templates

The member report templates are as follows:

- **Membership Report (Summary)**: Provides a summary of memberships by type and join date.
- **Membership Report (Detail)**: Provides a list of members along with their membership status and membership details (join date, start date, and end date).
- **Membership Report (Lapsed)**: Provides a list of memberships that have lapsed, or will lapse before the date you specify.

Event report templates

The event report templates are as follows:

- **Event Participant Report (List)**: Provides lists of participants for an event.
- **Event Income Report (Summary)**: Provides an overview of event income. You can include key information such as event ID, registration, attendance, and income generated to help you determine the success of an event.
- **Event Income Report (Detail)**: Helps you analyze the income generated by an event. The report can include details by participant type, status, and payment method.
- **Participant list Count Report**: Shows the participant list with participant count.
- **Income Count Summary Report**: Shows the income summary of events with participant count.

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Pledge report templates

The pledge report templates are as follows:

- **Pledge Report**: Displays pledge details filtered by date, amount, or status.
- **Pledged But not Paid Report**: Displays contacts who have pledged, but have outstanding or overdue payments.

Case report templates

The case report templates are as follows:

- **Case Summary Report**: Provides a summary of cases and their duration by date range, status, staff member and/or case role.
- **Case Time Spent Report**: Aggregates the time spent on case and/or non-case activities by activity type and contact.
- **Contact Demographics Report**: Displays demographic breakdown for case clients (and/or non-case contacts) in your database. It also includes custom contact fields.

Grant report templates

The grant report templates are as follows:

- **Grant Report**: Generates report filterable by any of the grant data fields, including date range options.

A few report templates come in a disabled state. Visit **Administer** | **CiviReport** | **Manage Templates** to view and manage the status of report templates registered in your system.

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FPAGM staff members deal with several levels of leadership and key stakeholders who expect to receive reports on a regular basis. This includes the Executive Director, who is concerned with membership numbers and total donations, the Marketing Committee chair, who requires monthly membership status reports, and the Development Committee Chair, who wants to see total contributions of major donors over specified periods of time.

During system configuration, for each requested report, they review the list of templates and select and configure the one they believe will be most appropriate for their needs. Since the Executive Director has much on his/her plate, he/she look for reports that support bar and pie charts, as it provides a visual snapshot of the organization's activity that can be interpreted quickly.

The Marketing Committee chair wants to receive reports on a monthly basis. The staff members use the **Membership Report (Summary)** template to construct a report that breaks down membership by type, grouped by month, and displays data for the previous 12 months. The e-mail settings are configured and a cron job is set up to have this report e-mailed to the chairperson on the last day of the month, freeing staff from the responsibility of generating and sending the report.

Likewise, a "Top Donors" report is constructed, displaying the activity for the previous six months. Since this report is only provided as requested, staff members save it to the **Contributions** menu for easy access.

Customizing and building your own templates

Though the reports that ship with CiviCRM seek to anticipate the bulk of your potential reporting needs, it is possible that you may have needs not addressed by existing report templates.

While it is beyond the scope of this book to delve into specific details regarding the development of new report templates, it is important to note that the report tools anticipate these needs. The code to build templates is very self-contained, modularized, and somewhat more accessible to beginner programmers than other areas of the software. You still need some familiarity with PHP and the MySQL database in order to build your own report template, but you may find it easier to work with than other areas of the CiviCRM codebase.

If you are interested in exploring this further, visit the following online documentation for guidance on customizing or creating a template: `http://wiki.civicrm.org/confluence/display/CRMDOC/Custom+Reports+(How+to)`.

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Summary

Let's circle back to the original premise set forth at the beginning of this chapter: *A report is primarily about telling a story—it is data with a message.*

We began this chapter thinking about what a report truly is, and guarding ourselves against missing the forest while staring at trees. After having reviewed the mechanics of creating and working with reports and outlining the various report templates available, it would be easy to lose sight of this broader context.

The reporting tools covered in this chapter are a means toward an end. You will select your report fields, define data filters, and choose your display options with the goal of communicating to other staff, organization leaders, or yourself, about the story of your constituents. This story takes shape through the lens of activities, contributions, pledges, memberships, events, cases, grants, or other windows into your data.

In this chapter, we:

- Set the context for working with reports and understanding the goal of reporting
- Defined key terminology used in CiviCRM reporting tools, including report templates and report instances
- Reviewed available report settings common to all reports
- Outlined the use of report criteria, which will be report-specific
- Summarized available report templates that are included with a base installation of CiviCRM
- Reviewed the core purpose and goal of reporting

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13
Customization, Community, and Cooperation

In this closing chapter, we want to tie up some loose ends and point you forward in your implementation of CiviCRM. We will learn about the following:

- Future versions and project roadmap
- Customizing and extending
- Community and cooperation

Future versions and project roadmap

When we began writing this book, the current stable version of CiviCRM was 3.1.4 and 3.2 alpha was just being released to the community. Since then, v3.2 stable has been released and gone through several revisions, and 3.3 is now a stable release. By the time book production is finished, v3.4 will be nearing an alpha release. Needless to say, the CiviCRM development cycle typically follows the open source mantra of "Release early, release often".

This book is based on the v3.2 series. At times, we've provided comments where new v3.3 functionality impacts or expands the existing v3.2 toolset. However, for the most part we've focused on functionality present in the v3.2 release.

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New functionality

If you are new to CiviCRM and are introduced to a more recent version than v3.2, this book will still be of value to you, as the vast bulk of functionality is the same. The following represents key new features in v3.3 that we've not covered in this book:

- CiviCampaign is introduced as a new component in a somewhat beta version. The functionality is geared toward advocacy organizations and political campaigns, providing tools for canvassing, petitions, and surveys.
- **Advanced Search** can now be used to retrieve related records (not just contact records). Recall that when we reviewed search tools, we distinguished the different "lenses" through which records could be searched and retrieved. **Basic Search** and **Advanced Search** retrieve contacts (no duplicates) and component searches retrieve the related records (such as contributions). In v3.3, **Advanced Search** can now be used to retrieve these related records. For example, you can specify search criteria across contributions, memberships, and events, and retrieve contribution records.
- The dedupe/merge engine has been significantly reworked to improve performance. In previous versions, this tool could take significant time or would timeout if run across a large database. It will now scale quite well for large datasets.
- CiviMail has also received some scalability improvements and now supports multi-threaded sending. While dependent on the capabilities of your SMTP service, this can significantly increase throughput for large mailings. Several new reports have also been created to provide tools for searching across multiple mailings.
- A number of new reports for CiviCase and CiviGrant have been added, expanding the types of data that can be retrieved from these components.
- CiviEvent price sets now support a maximum value for field options. This was primarily intended to restrict the number of attendees signing up for breakout sessions. Many conferences have concurrent breakout sessions with a maximum number of attendees based on the size of the room. Each set of sessions will be a price set field, and each concurrent session an option value displayed as radio buttons with associated prices (if applicable) and maximum number of attendees.
- Do you recall the ability to share a household address with individuals discussed earlier in this book? In v3.3, this structure is extended to any contact type. For example, an individual could have their work address set to share the address of their employer.

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- One existing weakness in CiviCRM is the limited change tracking mechanism. While v3.2 and prior do a good job of tracking who made the most recent change and when, they offer little information about the nature of the change. V3.3 introduces a first effort at a full audit trail in which any and every change made to the database is logged and can be accessed. The tools for reviewing, interacting with, and restoring from those changes are initially limited. However, the raw data will be there, protecting you from unintended deletions. At some point, we may see quality assurance and moderation functionality allowing supervisors to monitor and approve self-service and front-line staff changes.
- On more of the developer side of the discussion, v3.3 includes upgraded versions of jQuery and jQuery UI, as well as a new mechanism for installing CiviCRM extensions for reports, custom searches, payment processors, and other tools. The CiviCRM community is rapidly broadening, bringing with it many new audiences who are involved in developing and extending the software to meet their organizational needs. This extension framework provides more flexibility for packaging and disseminating tools for specific needs. It enables specialized functionality to be developed and supported by the community without requiring it to be included in the core download.

As with every release, there are numerous minor improvements throughout the software seeking to increase performance, create more efficient workflows, and expand functionality.

Upcoming versions

It's not possible to accurately identify exactly what will be part of the next release. However, there are a few key pieces which are clearly on the radar screen.

Chief among those will be compatibility with the latest CMS releases: Drupal 7 and Joomla! 1.6.

The timeline for those releases is likely to dictate the version numbering used. CiviCRM v4.0 will most likely be reserved for a version fully (and exclusively) compatible with the new CMS releases.

Apart from the CMS compatibility issue, these versions are likely to include some degree of code restructuring with the goal of improving performance and upgrading core libraries to new offerings that will provide a better toolset moving forward. For a more detailed and current list of features planned for upcoming releases, visit `http://wiki.civicrm.org/confluence/display/CRM/CiviCRM+Roadmap`.

Be sure to monitor the CiviCRM blog (`http://blog.civicrm.org`) to learn more about these new releases and how to be engaged in the process.

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Customizing and extending

Early in this book, we presented CiviCRM's open source licensing as one of the chief selling points of the software. Open source means the source code is readily available and can be altered or added to without infringing on the license. In short, it means you can open up the hood and tinker with it to your heart's content.

Of course, "tinkering" isn't really what benefits you. It's the ability to truly customize, expand, add-on, restructure, or do whatever you need to, in order to make sure this software suits the needs of your organization. Then, you can share with the community so that you benefit from their efforts to improve, document, support, and extend the software. That is the true value of open source. Unlike proprietary closed-source software, you're not wholly dependent on the roadmap plans of the company who owns the software (crossing your fingers in the hope they build your desired functionality), nor are you required to work through their support desk to achieve software modifications. Open source means you can modify the code yourself, or hire a developer to help achieve your needs.

While it's beyond the scope of this book to delve fully into CiviCRM customization, we want to leave you with some best practices and general direction for effectively pursuing your own customization efforts.

Built to be customized

Realize first of all that CiviCRM was built to be customized. If you were to have a conversation with the core team, they would tell you that they built the software with the express purpose of making it as easily extendable as possible. They don't want you to be hamstrung by the code. They want to help you achieve your customization needs quickly and efficiently. There are several ways in which this is realized.

Hooks and overrides

The first way the software supports customization is through code management assistance. Hooks provide tools for injecting your code into existing processes and are the cleanest (and generally most upgrade-friendly) path to customization.

If you're familiar with Drupal's hook structure, you will find CiviCRM's structure to be patterned in a similar way. You insert your own code into the executed process when particular events occur, without having to modify anyone else's code. In Drupal, you implement hooks via modules; in Joomla!, they are handled through a single hook file that can be stored in your PHP override directory (as described in the following section). In either case, your hook implementation will consist of calling the hook function, limiting its scope (if appropriate), and altering or adding to the code behavior as needed. For example, you can use the `buildForm` hook to alter default values on a profile form displayed on your site.

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For a list of available hooks and specific guidance on implementing them, visit `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviCRM+hook+specification`.

Hooks are clean and are generally preferred because you are typically working with and impacting only the code that pertains to your specific needs. In the preceding example where you are altering a default form value, the hook allows you to zero in on the specific form and alter just the desired field, without touching or impacting any other field or process in the form class. Your customization "footprint" is kept to a minimum.

However, you will at times have more significant customizations that cannot be accomplished with a hook, or for which no hook is currently available. In those cases, CiviCRM provides the ability to define override directories for both PHP and template (`.tpl`) files. It's often easier to modify the layout of a page by overriding a `.tpl` file than it is to modify the PHP code that determines what will be displayed.

An override directory, as the name suggests, is a location distinct from the core code in which you place modified versions of files which will "override" the core files. Before using override directories, you must define them in your global settings. Visit **Administer** | **Configure** | **Global Settings** | **Directories** to set those locations, taking note of the recommended settings found in the help text (depending on your CMS). Once configured, you will place your modified copy of the original core file in the corresponding folder path inside the override directory.

For example, suppose your PHP override directory for a Drupal installation of CiviCRM is `/var/www/domain.com/public_html/sites/domain.com/files/civicrm/custom_php/`. To override the form file used to create a new case, you would place your modified file in `/var/www/domain.com/public_html/sites/domain.com/files/civicrm/custom_php/CRM/Case/Form/Case.php`.

In Joomla!, the standard location to place the override files will be in your media directory. For example: `/var/www/domain.com/public_html/media/civicrm/custom_php/CRM/Case/Form/Case.php`.

Files for specific profiles, contribution pages, and events can be overridden separately from those for other profiles, contribution pages, and events. Insert an extra directory level with the ID of the profile, contribution page, or event to override. For example, `/var/www/domain.com/public_html/sites/domain.com/files/civicrm/custom_tpl/CRM/Contribute/Form/Contribution/11/Main.tpl` will override the contribution page with an ID of 11.

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There are several important things to note when using override files:

- PHP override folders must be built from the CRM directory, as exemplified previously. Template overrides will be built from the `/templates/CRM/` directory. In other words, the structures are built from the `civicrm/` package subfolder (in your core files).
- The override file itself should be a modified form of the original file. Even if you are only altering a small portion of the file, the entire file will replace the corresponding core file and thus must include all necessary code. This is the key difference between hooks and override files—whereas hooks may alter code at the line level, override files alter at the file level.
- Be sure to work with the correct version of the core file and maintain updates in both your core and override files. For example, if your site is running v3.2.4, don't use the core file from v3.2.5 as the basis for an override customization. The newer revision may include additional changes that break your site functionality. When upgrading your site to a newer version or revision, you should plan to carefully compare code in your override files and re-implement your modifications using the new core version.

Both of these customization methods help you achieve an important principle in development: don't mess with the core files. Wherever possible, you should avoid altering core code files. Failing to do so will impede your ability to cleanly upgrade the code base and leave you vulnerable to overlooking (and losing) important modifications.

APIs

If your customizations take place within the CiviCRM environment, you can easily access and make use of the classes and methods throughout the code. However, if you are extending CiviCRM outside of that environment (such as a Joomla! extension or Drupal module), you may want to make use of CiviCRM's public API.

You can view a list of APIs online at `http://wiki.civicrm.org/confluence/display/CRMDOC/CiviCRM+Public+APIs` or through the (relatively) new API documentation at `http://api.civicrm.org`.

APIs can be invoked through the PHP code in your site, the CiviCRM REST interface, in JavaScript or AJAX, through Smarty templates, through the Drush module in Drupal, or even by creating standardized wrappers in other languages like Perl. Depending on your access method, you will adapt the function calls with associated parameters accordingly. For more details about implementing the API through these various methods, visit the API link provided above.

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Developer documentation and sample code

In the spirit of community, CiviCRM encourages developers to share code snippets and suggestions through the online wiki. Developer resources are largely collected at `http://wiki.civicrm.org/confluence/display/CRMDOC/Develop`, though there are other locations throughout the wiki where code resources may be found. From this page, you'll find access to documents detailing the code architecture, **Entity Relationship Diagrams** (**ERD**) of the database schema, hooks, API, sample code, and other tips and tricks to assist with development.

Donald Lobo, the lead CiviCRM developer, has been working on an implementation of CiviCRM for a small school (aptly titling the project **CiviSchool**). He has shared all his code customizations (largely in the form of Drupal modules) along the way. It provides a great prototype of best practices from which you can glean ideas and sample code for your own needs. You can access his code at `http://svn.civicrm.org/sfschool/trunk/` and read about the customizations through the blog at `http://civicrm.org/CiviSchool`.

If you implement the customizations, you feel would be useful for the community at large, be sure to add them to these wiki pages for the benefit of others.

Forums, IRC, and the issue tracker

Inevitably, your customization efforts will quickly lead you to a host of questions. Where do I find a certain file? How does the form process work in a certain place? Is there a hook that will impact a certain process at the place I need it? How do I structure my arrays correctly?

The CiviCRM codebase is fairly large and somewhat complex. It uses many external libraries and packages and a variety of technologies. However, it's also very consistent, which means the learning curve to resolve customization needs for a specific component will generally translate quickly to the file and code structure in other components.

Nevertheless, you'll have questions and will want to know where to turn to have them answered. There are two primary places you should go—the forums (`http://forum.civicrm.org`) and the IRC channel (`irc://freenode/civicrm` or `http://webchat.freenode.net/?channels=#civicrm`).

There is quite a bit of existing troubleshooting and development-related content on the forums, so you may find answers to your questions by simply searching there. It is a very active environment and threads are regularly reviewed and responded to by the core development team and many experienced implementers and developers. You'll find the community very committed to supporting each other in that venue.

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The core team and many active developers also regularly hang out on the IRC channel, providing a good place to ask questions and get knowledgeable answers. As with any real-time chat room, the IRC channel will vary throughout the day in terms of the number of active users and their availability to help with your issues. So if the conversation seems quiet, don't give up—just stop by later to see if anyone is around.

You may also want to become familiar with the public issue tracker (`http://issues.civicrm.org`). It is used by the development team and is open to the community for bug and feature tracking.

If you come across what appears like a bug in the software, don't immediately create a new issue ticket. It may be something that is specific to just your implementation of CiviCRM, or it may be a bug that has already been reported or even fixed in more recent versions. A good place to start is by searching the forums at `http://forum.civicrm.org` for relevant posts. If you don't find anything, try to reproduce the error on the latest stable version of CiviCRM running on the demo site at `http://demo.civicrm.org`. Then post your problem into the appropriate forum, including the text of error messages received, what you were doing when it happened, and whether you can reproduce it on the demo site. Within a few hours or a day you'll probably have a helpful response. It may be a suggested fix or work-around, a link to a relevant page in the wiki, or a request to create a new issue on the bug tracker.

If you are able to solve the problem you posted into the forum, it's a good idea to update the thread with what worked to help others who may face the problem, and to provide feedback to those assisting you. Remember that they're people too. Many who help out on the forums aren't paid for their time there. A "thanks" and a respectful tone go a long way towards getting people to help you, while an abusive, entitled tone is more likely to be met with a cold shoulder.

If you put in some time figuring out how to do something that wasn't documented, then it's a great idea to write up how you did it on the wiki. Not only will it help you remember how to do it when you need to do it again six months from now, but will also help others. Some of them might even provide additional improvements to your modifications..

Community and cooperation

The forums aren't just for asking about potential bugs. They're also great places to ask questions about how to do something. Try to be specific in your request, indicate how you've tried to solve your problem already, and discuss what you're considering in terms of a possible method for addressing the needs.

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A growing way to learn about and share experiences with CiviCRM are local meet-ups. These relatively informal events generally include demonstrations of how people in an area are using CiviCRM, perhaps some technical discussion, and a chance to chat and ask questions. So far, there have been meet-ups in cities around the world, including Berlin, Boston, Bristol, Brussels, Buffalo, Chicago, Dallas, Fort Worth, Dresden, Dublin, Geneva, London, Montreal, Mumbai, New York, San Francisco, Seattle, Taipei, Toronto, Warsaw, and Washington. Check out `http://civicrm.org` to see if there is one near you, and consider starting one if there isn't.

The core team and a growing number of other providers also put on user, administrator, and developer training events. There have also been a few code sprints, the first CiviCon in San Francisco in 2010, and the second one in Chicago in March 2011. Getting to meet people face-to-face provides an invaluable human dimension to the sharing and socializing that takes place in the community spaces online. The most valuable interactions and learning usually happen in the hallways and over drinks.

As a result of the benefits to you and the community, we strongly encourage you to participate in whatever ways you are comfortable. That might be finding advice on the wiki, posting a question to the forum, going to a meet-up, or even attending a training camp. Many people find that it is worth the time and effort they invest.

You may also find that at a certain point, you'd like to see CiviCRM add a feature or incorporate some tweak. `http://civicrm.org/contribute` lists the current **Make It Happen** initiatives, where community members can make donations to fund the development of improvements and new features. Those who are able can also provide 50 percent seed funding for a new initiative to get it started.

Summary

In this closing chapter, we have:

- Looked at upcoming versions of CiviCRM and the overall roadmap
- Briefly reviewed key considerations when customizing your installation
- Outlined why and how you can participate in the growing CiviCRM community
- Learned how you can cooperate to advance the project

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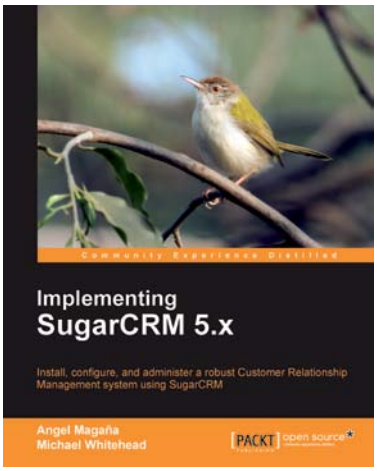

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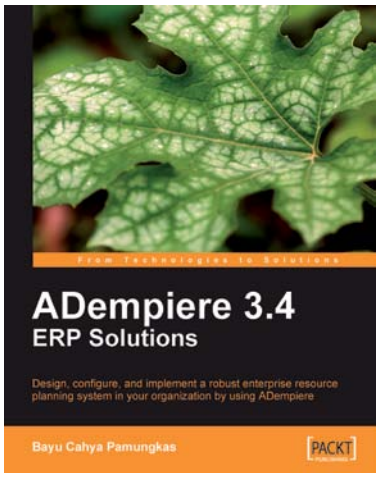
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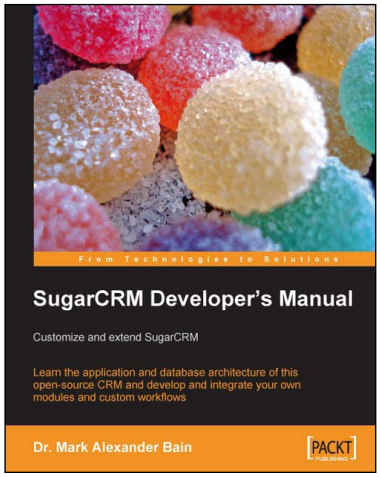
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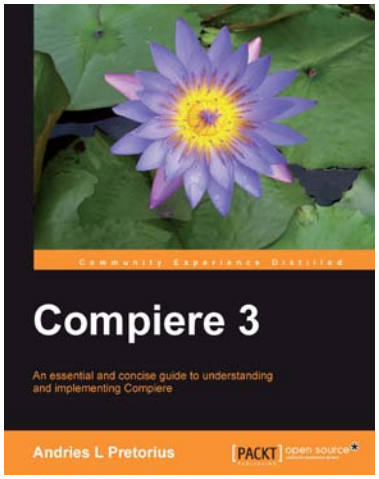
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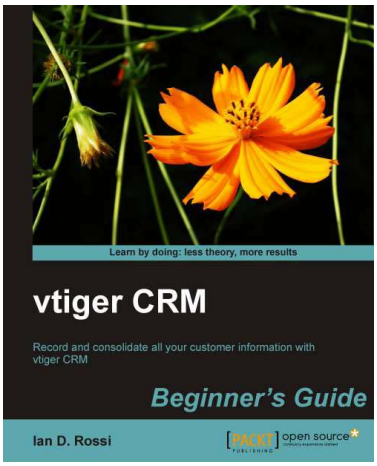
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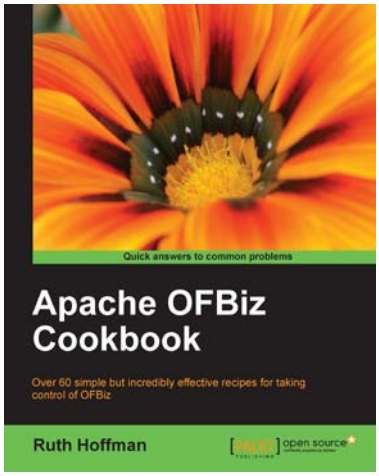
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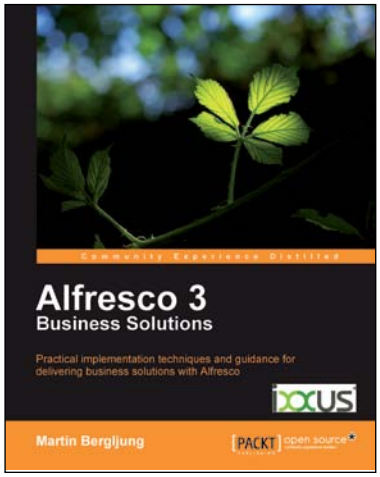
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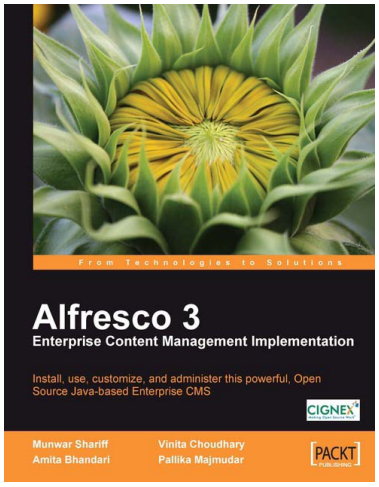

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